

THE DOCK & HARBOUR AUTHORITY

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OCTOBER, 1930.

Editorial.

The Port of Naples.

In recent years, the Italian Government has taken whole-hearted interest in the ports and harbours of their country, and have granted considerable sums in loans for the purpose of bringing these ports and harbours up to date; realising that, by this means, the country will eventually reach a prosperous state.

The loans in question have been utilised for the purpose of building new quays and also bringing the facilities in the ports up to a standard that will attract foreign shipping of any description, and one of the ports which comes under this category is Naples, which has been taken as the subject for this month's supplement.

The facilities and accommodation at Naples have been sadly lacking, but in 1924, the inadequacy of the facilities at the port were brought to the notice of the Italian Government, who issued a decree, which provided for an enlargement of the port with an expenditure of 200 million lire; and these enlargements are nearly at the point of completion.

Several new quays have been built which have given additional warehouse space, and have also allowed for the installation of up-to-date cranes.

Even when these undertakings are completed, it is still considered that the Port of Naples will require a large dry dock to accommodate any vessels which may require repairs or refitting, and this project is now receiving due consideration.

An illustrated article giving details of these improvements and enlargements appears on another page.

Manchester Ship Canal.

Manchester Ship Canal Co. has supplied us with a summary of the approximate traffic return for the month of August. The traffic receipts for the month amounted to £100,524 compared with £115,359 for the corresponding month of last year. The total receipts for eight months of 1930 were £892,405, as against £973,701 for the same period of 1929, a total decrease of £81,296. The August decrease is, of course, a considerable one, and is above the average for the first eight months of this year, but in view of the unsatisfactory condition of trade generally, it could hardly have caused much surprise if the shrinkage, as compared with last year, had been greater. It was in October last year that the reduced scale of charges came into operation, so that in October and the following months the comparisons with last year should be more favourable.

The Institute of Transport.

The first ordinary meeting of the 1930-31 Session will take place in the Lecture Theatre of the Institution of Electrical Engineers, Victoria Embankment, London, W.C.2, on Monday, October 13th, commencing at 5.30 p.m., when the Hon. Sir Arthur Stanley, G.B.E., C.B., M.V.O., will be inducted as President by Sir Josiah C. Stamp, G.B.E., the retiring president, and will deliver his inaugural address.

Welland Ship Canal.

The official opening for traffic of the new Welland Ship Canal has again been postponed. It had been intended to hold the opening ceremony on September 1st, but owing to difficulties experienced by the contractors, the official opening date has been put back until some time in the Spring of 1931.

The contractors are stated to have met unexpectedly large quantities of very hard material about 1½ miles north of Welland, so that it was found to be impossible to dredge the summit level of the canal to a depth sufficient to accommodate

the upper lake freighters until well into the middle of September. Additional time is also necessary to provide enough width on the bottom of the canal prism to enable safe operation for large vessels, especially in cross winds.

Government Grants for the Improvement of Small Docks and Harbours.

It was recently announced by the Ministry of Labour that special grants would be authorised for the purpose of improving smaller docks and harbours with a view to promoting the development of agriculture, thereby providing the farmer with cheaper transport facilities for fertilizers, footstuffs and crops.

The schemes will in all probability provide facilities for improving coastwise shipping, dredging operations, reconstruction of quays and improvements to the facilities available at the present time and which are now in most cases totally inadequate.

In most cases, the smaller docks and harbours are not in a position to undertake their own improvements, nor even to advance any of the money required, and therefore, it means an advancement of practically the whole amount by means of a Government grant. This decision has been long deferred, and it is very gratifying to know that the question of these improvements is now receiving due notice.

It is considered that the plans for the improvements of these smaller ports will amount to £1,500,000, and it should therefore give a considerable amount of relief to the unemployed; at the same time, putting these smaller ports and harbours in a more prosperous state and inducing more foreign ships to trade with this country.

P.L.A. Canadian Tour.

In the interests of the trade of the Port of London and in pursuance of their policy of maintaining personal contact with overseas traders, particularly those in the British Empire, the Port of London Authority have decided to send Mr. A. E. Wildey, their Public Relations Officer, on a tour of Canada.

Mr. Wildey, who sailed on Saturday, September 13th, will deal with the subject either by way of an address, lantern lecture or cinematograph film.

He will attend meetings which have been arranged by various Canadian Boards of Trade and Chambers of Commerce in the principal cities and towns from Quebec to Vancouver, as well as in Newfoundland.

A feature which is materially affecting the activities of the Port and will be specially emphasised is the steady expansion of the London Market, consequent upon the greater industrialisation during recent years of the South of England and the environs of London; in short, there are increased opportunities for the sale of Dominion produce in the great London Market by reason of its larger and more prosperous population.

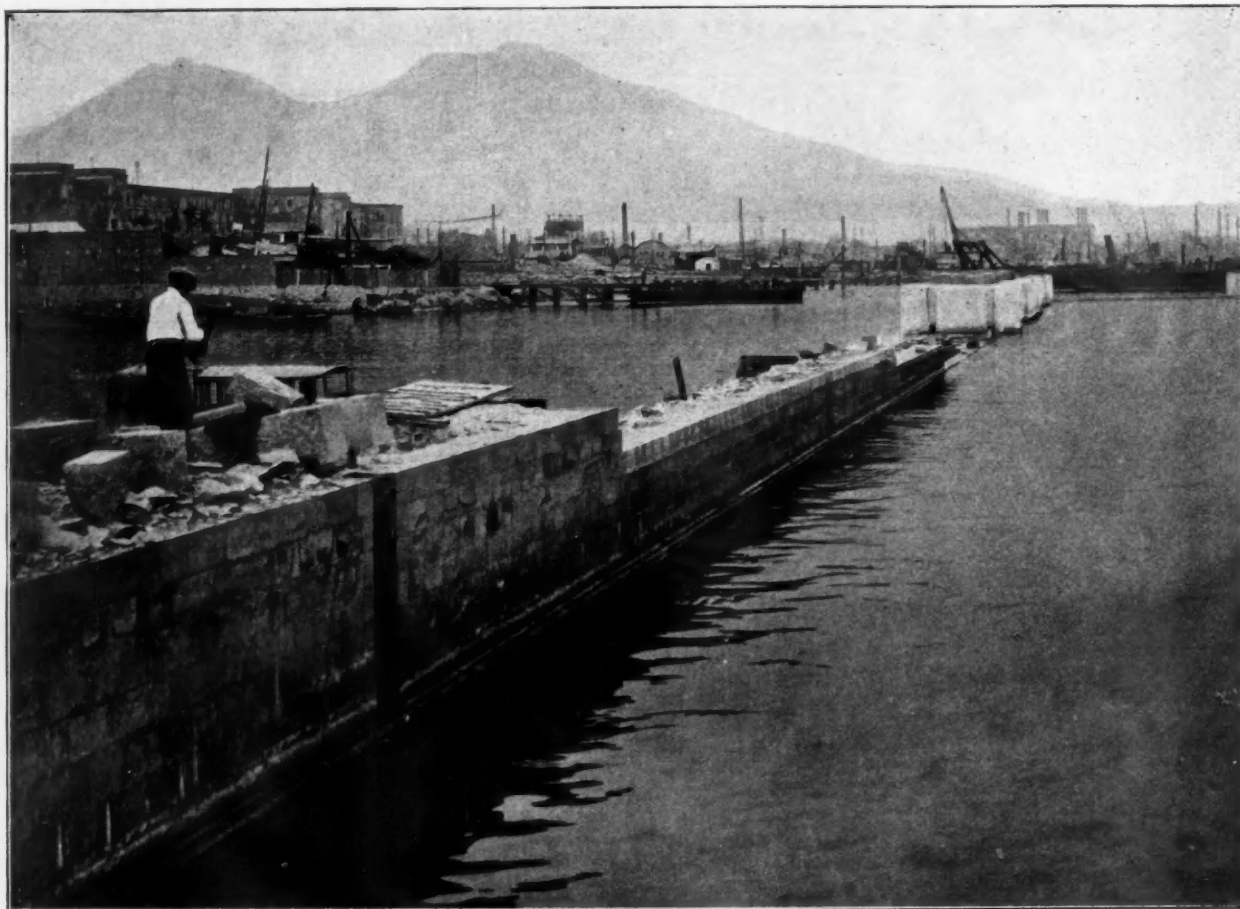
It will be recalled that last year one of the Authority's Principal Officers undertook a tour of Australia and New Zealand.

Southampton Docks Extension.

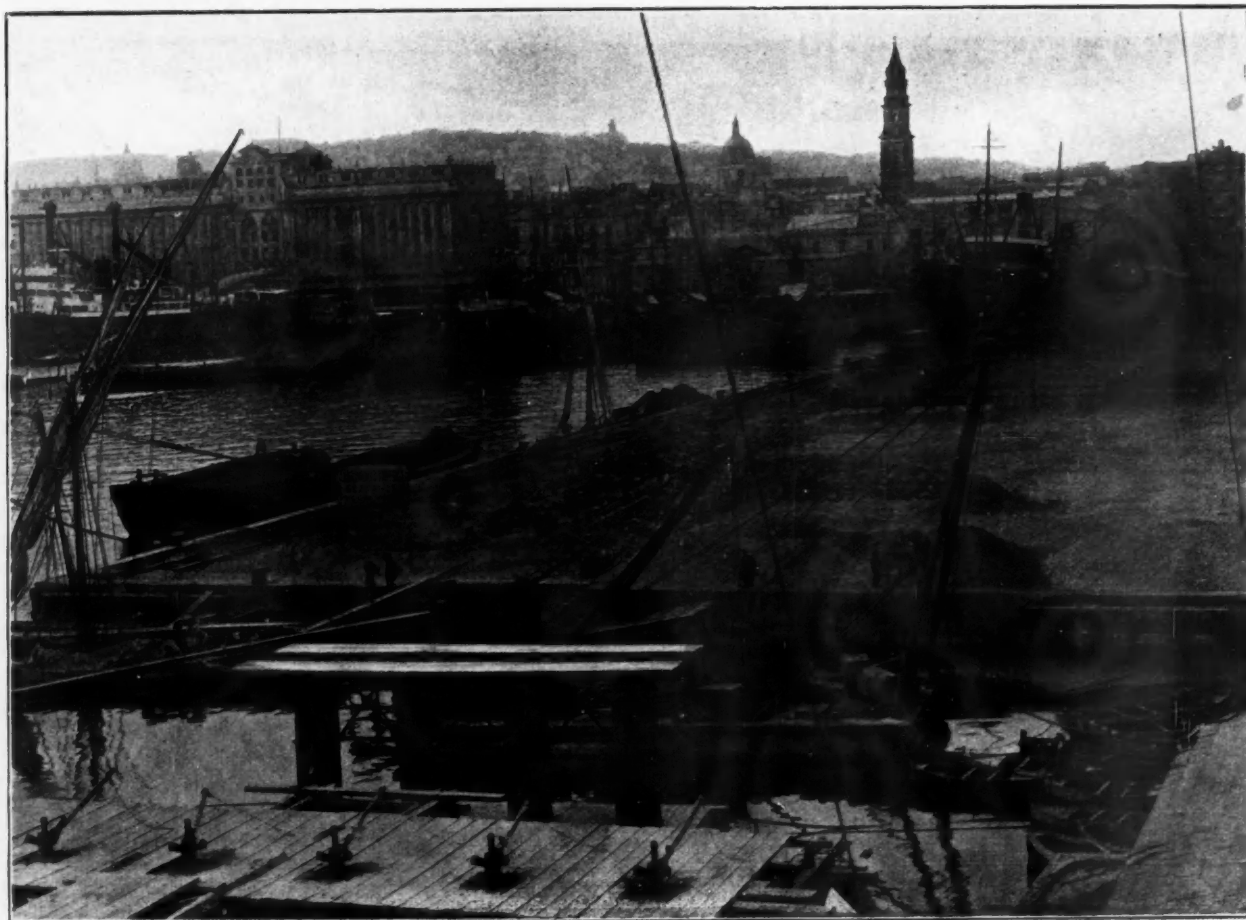
The vast docks extension scheme which the Southern Railway are undertaking at Southampton, and which it is estimated will eventually cost £13,000,000, is making good headway, and the first 1,000-ft. berth is expected to be ready for the use of shipping in the early part of 1931.

The combined pumping station and electricity sub-station is now in skeleton form and when completed will be the first permanent structure erected.

Port of Naples.



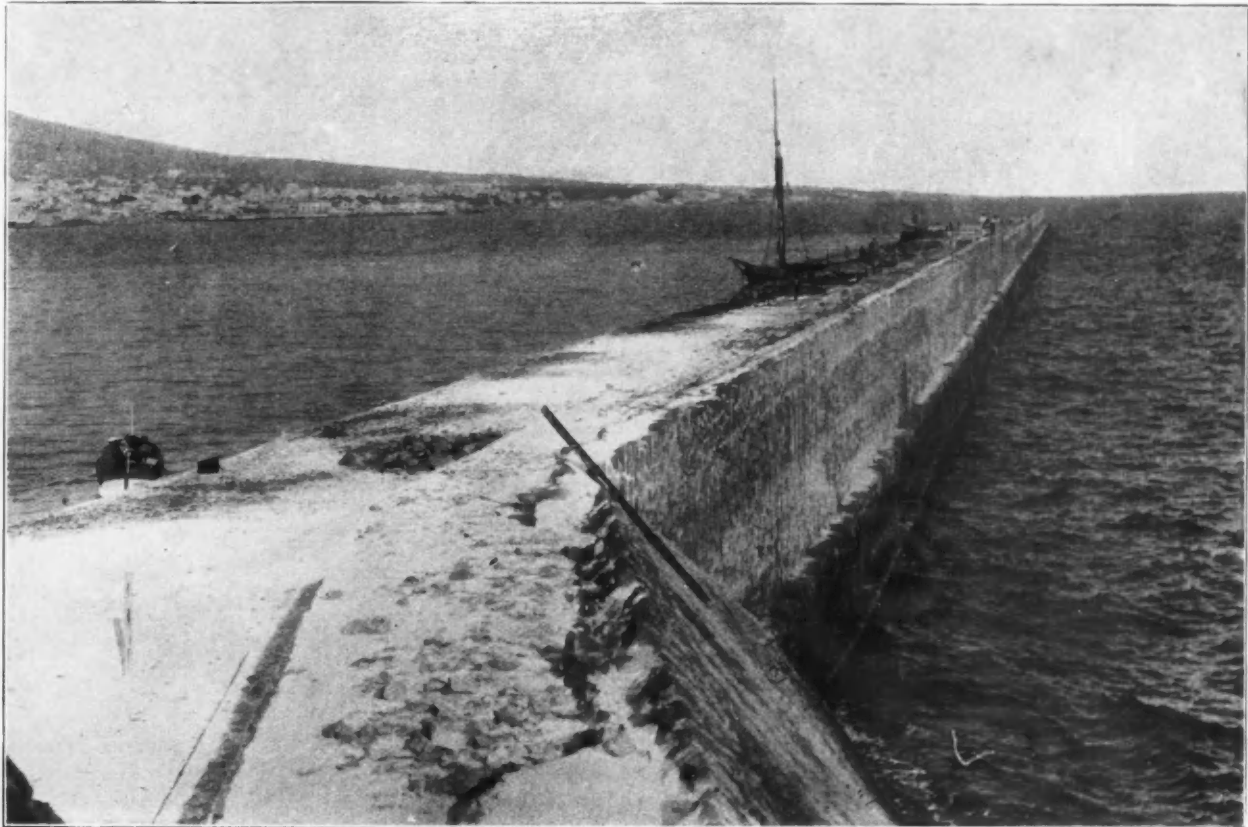
Quays under construction alongside the Eastern Dock of Naples, to be named Bacino del Littorio (between the Vittorio Emanuele and the Vigliena Jetties).



Extension of the Masaniello Jetty.

The Port of Naples.

Enlargement Works which have Recently been Completed.



The Extension of the Outer Breakwater, which is built with Cellular Blocks.

FOR several years past the Italian Government has shown keen interest in the question of the development of the port of Naples, and it has carefully considered the various demands which have been made by the industrial and commercial sections of Naples.

The history of Naples has been sufficiently illustrated in these columns that it may be unnecessary to repeat it again, but what must be considered is the fact that Naples is above all a port of call of all ships bound from Western to Eastern Europe and vice versa.

If one goes over the organisation of the steamship service calling at Naples it will be seen that they include, among others, also the ships of the Orient Line to and from Australia and the ships of the Nippon Yusen Kaisha Line to and from Japan, and sometimes the ships of the Ellerman City Line to the Indian Ocean which are not calling at Genoa.

Another confirmation of the peculiar situation in the port of Naples may be found in the fact that the number of passengers landing and sailing from this port is also larger than the number of the passengers arriving and clearing from Genoa, as the following figures relating to 1929 prove:—

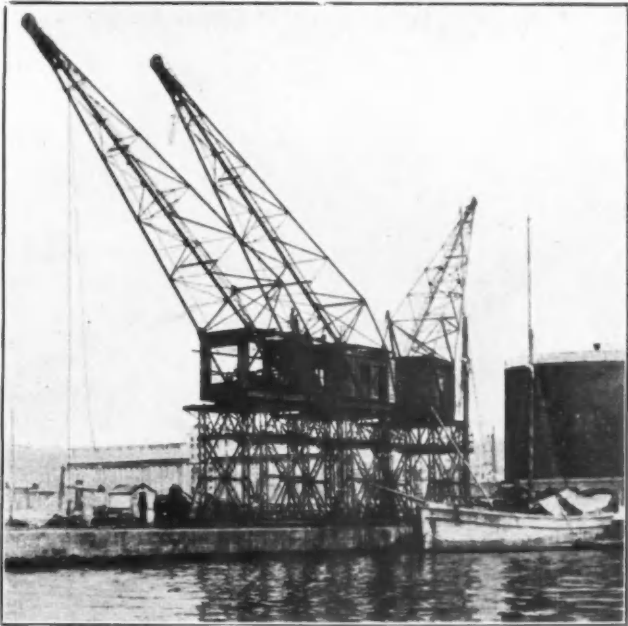
	Passengers Landing	Passengers Clearing
Naples ...	524,727	520,701
Palermo ...	95,957	58,923
Genoa ...	86,120	82,569
Civitavecchia ...	81,774	82,211
Venezia ...	33,786	26,630
Siracusa ...	27,593	24,652

This does not mean, however, that goods traffic at Naples is less important, and it should be taken into consideration that the exports from Naples represent practically one-quarter of the imports, while at other ports this proportion is not less than one-sixth.

If to this it is added that Naples has only 2,200 metres of quays utilisable for commercial traffic, and which is distributed as follows:—

Molo S. Gennaro outside ...	...	300 metres
Porta di Massa Quays ...	...	300 "
Villa del Popolo Quays ...	...	400 "
Molo Masaniello (first length) ...	...	200 "
Cesario Console Quay ...	...	400 "
Western Jetty of Vittorio Emanuele Mole ...	...	380 "
Molo Beverello ...	...	240 "

it shows that the average shipping on a metre of quay exceeds 1,000 tons a year, which is the highest figure reached at any Italian port, and it will readily be understood why Naples has since the war clamoured for enlargements in their port.

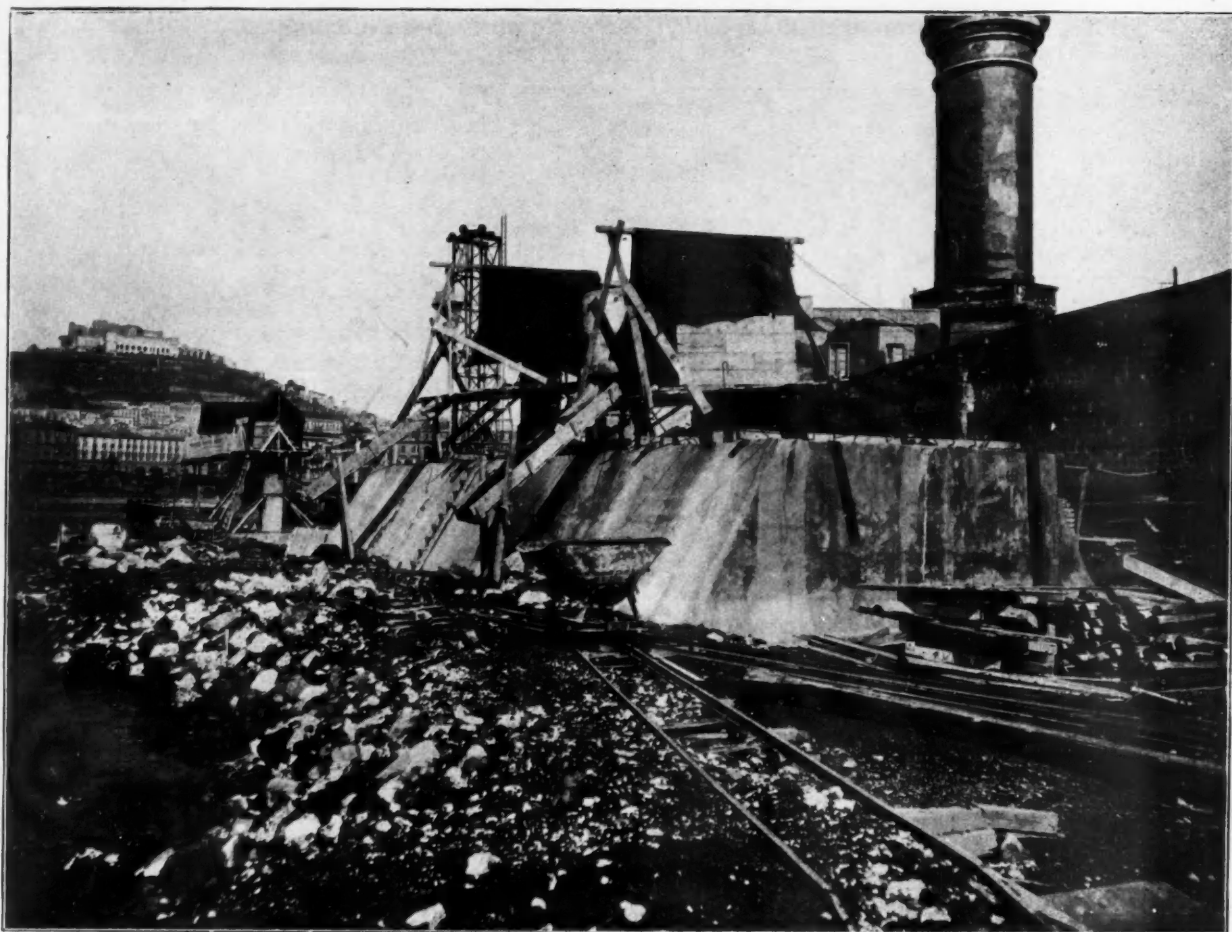


Electric Cranes on the Masaniello Jetty (Eastern side).

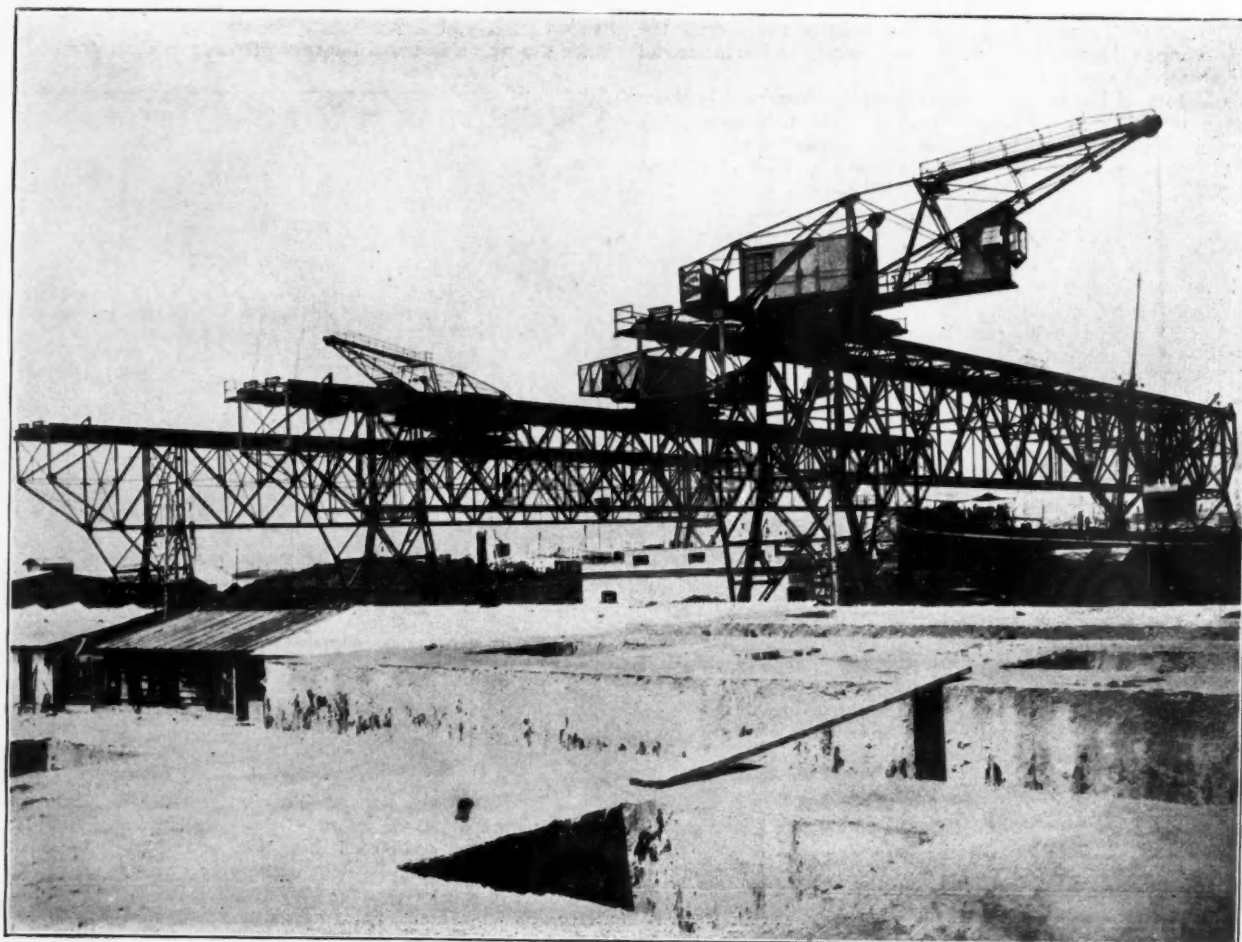
Only in 1924 the Fascisti Government took up the question, and a decree providing for the enlargement of the port of Naples to be completed in 1931, with an expenditure of 200,000,000 lire, was issued about the end of that year.

Now the works provided by the decree are about to be accomplished. This decree has altered those which had been the original suggestions of the civil engineers for the port of Naples, since instead of the two central jetties and the two lateral quays with intercalary basins to be built in the water

Port of Naples.



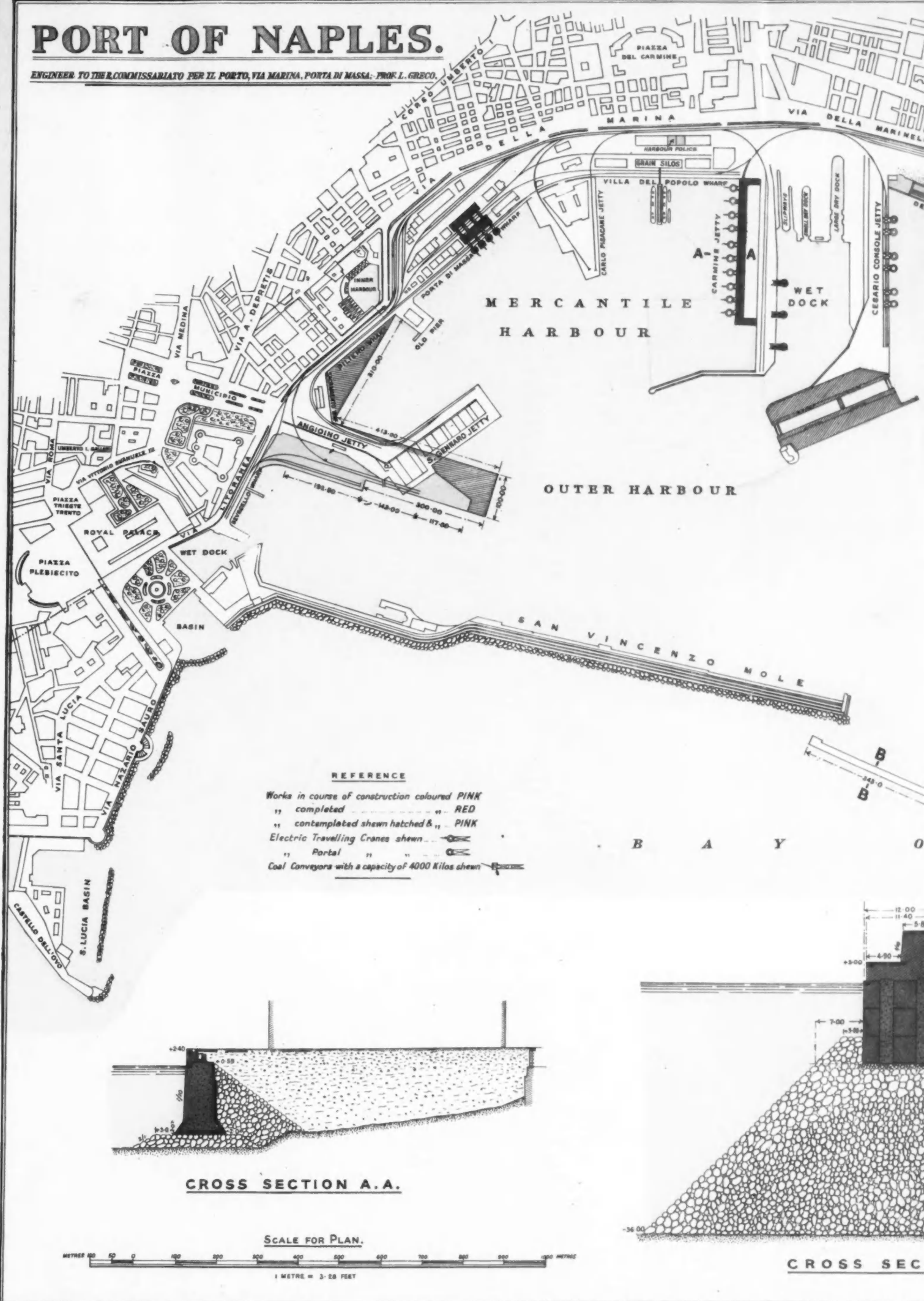
Concrete Caissons for the construction of the Quayage of the new Maritime Passenger Station on the Molo Angioino.



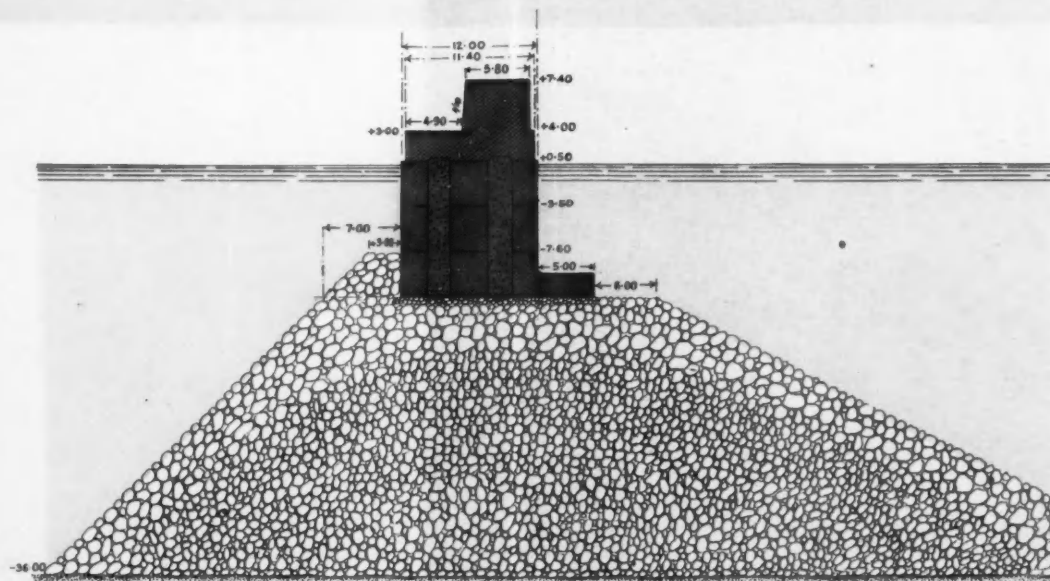
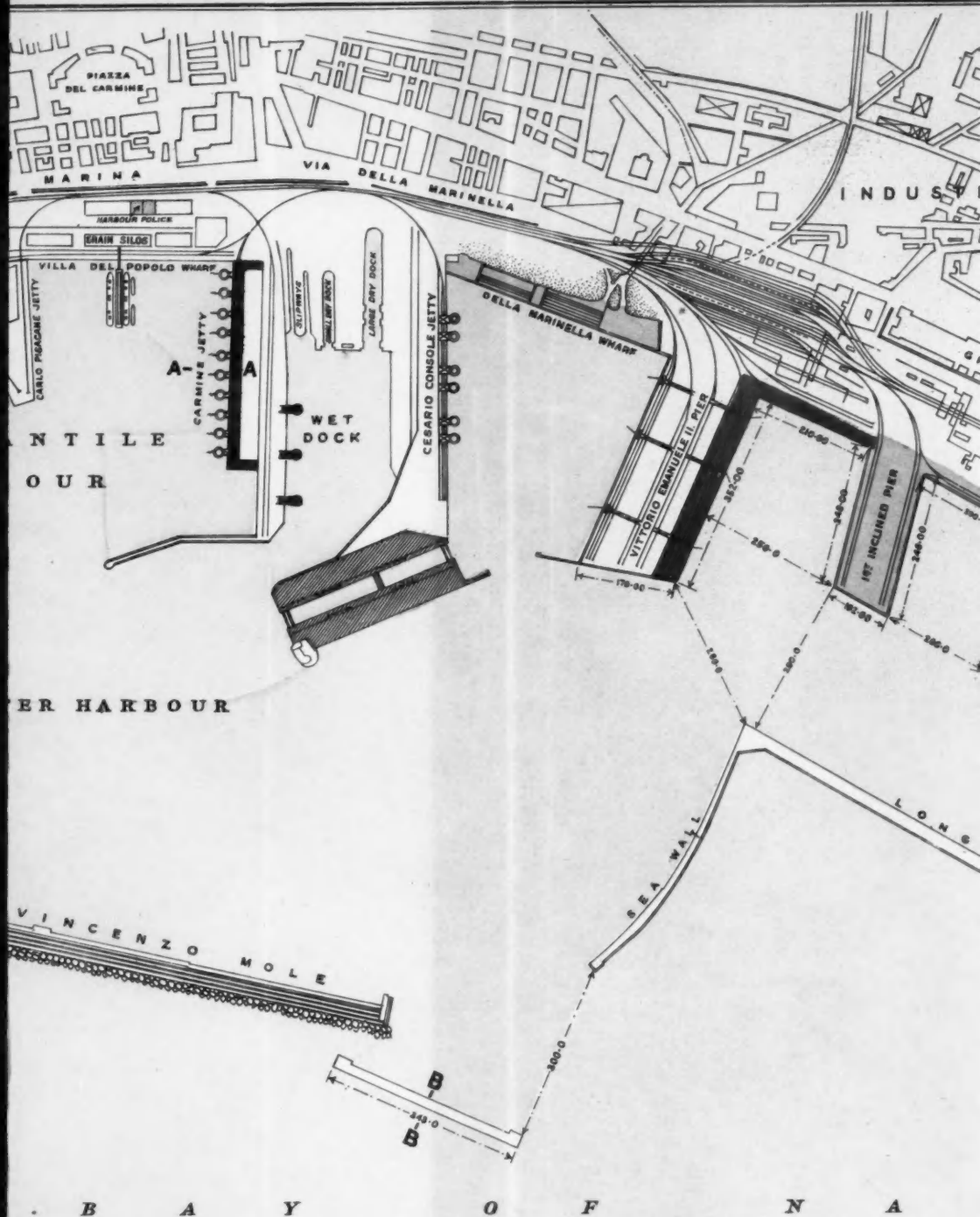
Electric Coal Elevators on the Vittorio Emanuele II Jetty.

PORT OF NAPLES.

ENGINEER TO THE R.COMMISSARIATO PER IL PORTO, VIA MARINA, PORTA DI MASSA: PROF. L. GRECO.

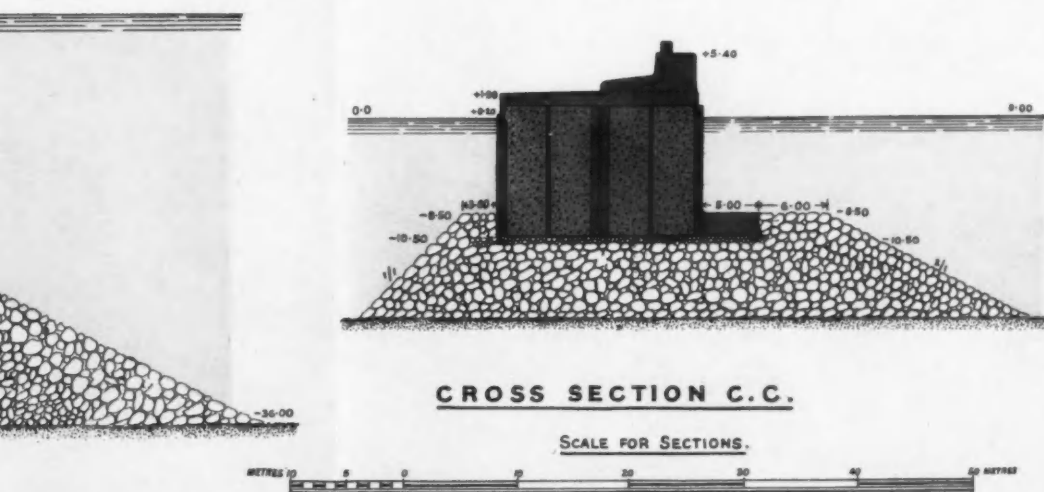
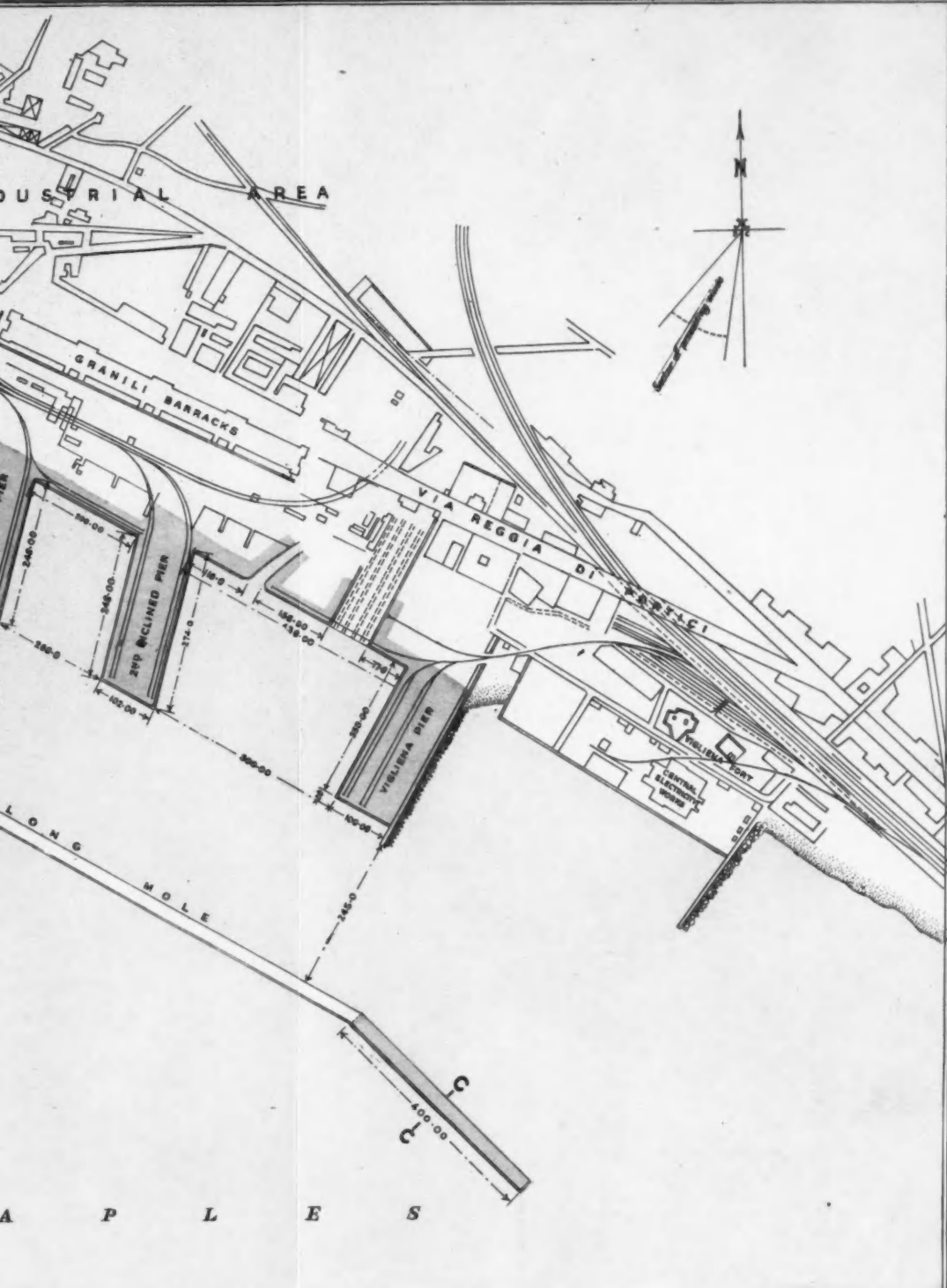


TO THE DOCK AND HARBOUR AUTHORITY



CROSS SECTION B.B.

...RITY, OCTOBER, 1930.



PORT OF NAPLES

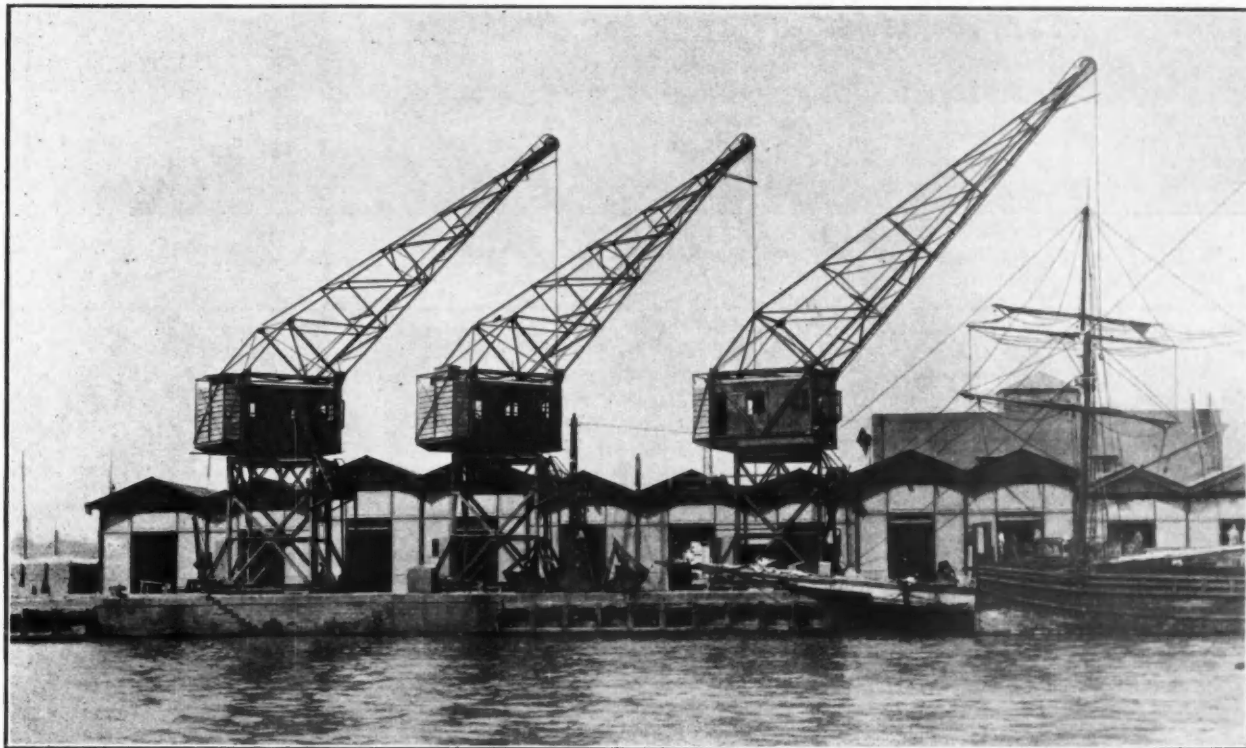


The Port of Naples—continued.

space between the Angioino Mole, the Beverello Mole and the San Vincenzo Mole for the berthage of large trans-Atlantic liners, provision has been made for the enlargement of the Angioino Mole, and two sections are under construction, one measuring 195 metres and the other 200 metres in length, where the large trans-Atlantic liners will be berthed and the maritime passenger station is also under construction. The first section of the quay is formed of concrete caisson blocks measuring 7.20 metres in length, 9.20 metres in breadth on the base, and 4.70 metres on the top and 13 metres in height. These caissons are divided longitudinally into four cells. The total cost of the enlargement of the Mole Angioino will be slightly over 15 million lire. The Porta di Massa Warehouse, built in concrete, has just been completed and is now in operation, and four electric cranes of 1.5 tons and 3 tons have been provided on this quay, besides several conveying belts to connect the

mentioned decree, that has been completed and put into operation. The Vittorio Emanuele jetty enlargement has added 14,000 square metres of area accessible for storage purposes, while the Vigliena jetty, which represents the eastern boundary of the port, has added 250 metres of quayage and 25,000 square metres of area to the port facilities. The same system of construction employed in building the V.E. II. jetty has been used for the Vigliena jetty. The cost of this has reached 6,430,000 lire.

The rest of the enlargements provided by the above referred decree is still under construction, but it may be expected that it will be completed within the established time. It should be noted, however, that the decree has altered the original project of this, what may be termed the eastern dock of the port of Naples, and as a matter of fact it was at first considered building a central jetty measuring 250 metres in length and 200 metres in breadth, and the Vigliena jetty measuring 250 metres

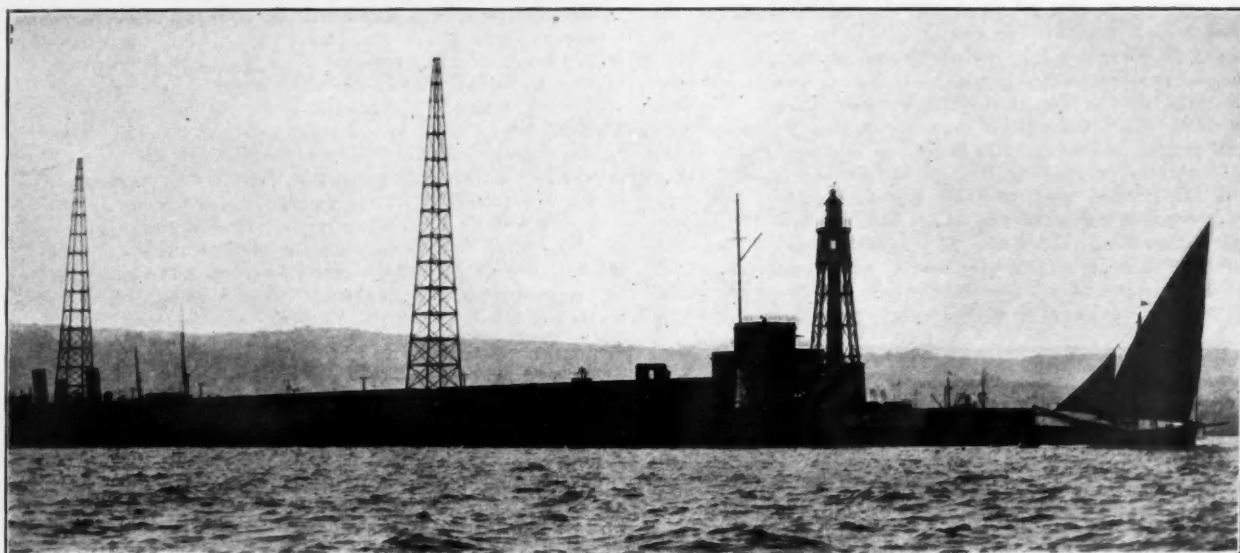


Electric Cranes to handle Lumber Trade on the Cesario Console Jetty in the Port of Naples.

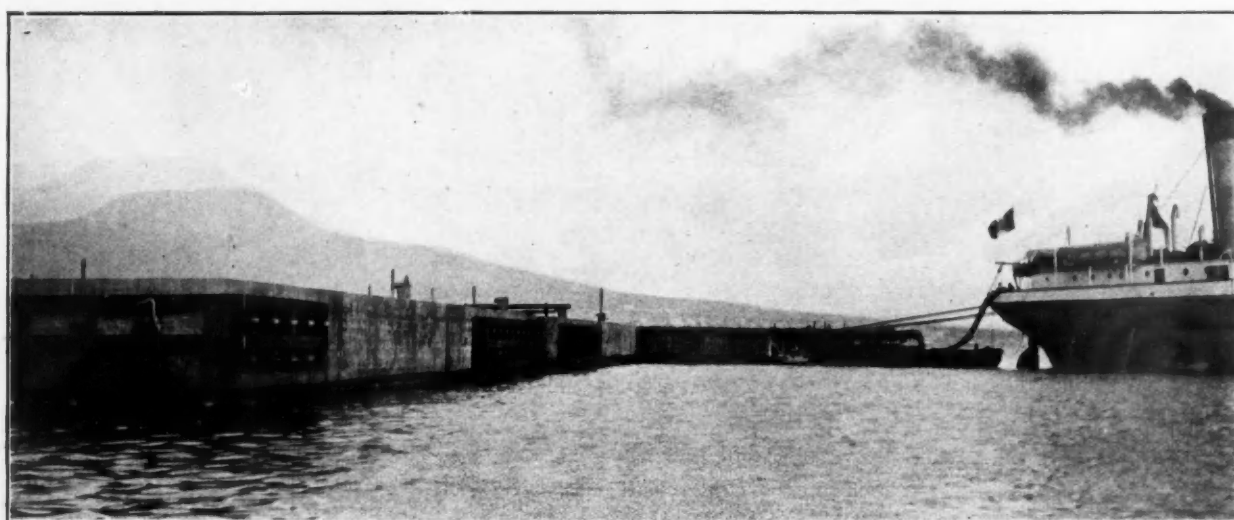
various existing sheds on the Porta di Massa quay. The interior of these warehouses is provided with 1.5-ton elevators. These conveying belts have a capacity of 600 bags per hour of a weight of a cental. The enlargement of the western side of the Masaniello Mole, which has increased the breadth of this mole by 50 metres and 350 metres in length, and this is now at the disposal of shipping. Ten 1.5-ton and 3-ton electric cranes have been provided on these 350 metres of new quayage. This quay has also placed at the disposal of trade, an additional 17,000 square metres of space. The Mole Masaniello has been built on the same lines as the Mole Angioino. The caissons are placed on a ground of volcanic stones. Each caisson has a length of 11.20 metres, a breadth at the bottom of 7.20 metres, at the sea level of 4 metres, and a height of 10.50 metres. This construction has cost 9,454,721 lire. Another portion of the works provided by the above mentioned decree, which has been completed and is already in operation, is the construction of six electric cranes of 1.5 tons and 3 tons on the western side of the Mole Cesario Console, and the widening by 40 metres of the Molo Vittorio Emanuele II., where the coal trade has been exclusively concentrated, and where automatic bunker coal handling facilities will be provided to bunker large ships in a few hours. The widening of the Pontile Vittorio Emanuele II. has placed 352 metres of new quayage at the disposal of trade and three 4-ton electric coal elevators have been provided. Until recently the eastern part of the Vittorio Emanuele II. jetty was not accessible to trade. The construction of the new part of this jetty has been by means of a system of piles of artificial blocks laid on a bed of stones. Each pile has five blocks measuring 3 metres in breadth and 2.30 in height, while the length is 6 metres for the bottom blocks, 5 metres for the following two blocks and 4 for the two last ones. The construction of the Vigliena jetty, measuring 250 metres in length and 100 metres in breadth, to be used for the oil and explosive trade, has also been put into operation. This is the last part of the works, provided by the above

in length and 100 metres in breadth in front of the Granili beach. The definitive project instead provided for the construction of two inclined jetties besides the Vigliena jetty. The western sides of these moles is to measure 248 metres in length and the eastern sides 274 metres, while both will have a breadth of 102 metres each. These new works will add about 2,350 metres of quayage and about 52,000 square metres of area which might be used for storage purposes, thus increasing the figures of the original project which provided for the addition of 2,000 metres of quayage and 11,200 metres of new area. The same system employed in the enlargement of this part of the harbour has been used for the erection of these jetties and moles, the cost of which reaches over 14 million lire. In addition to these, which may be termed the works to enlarge harbour facilities, additional works have been partly terminated, and are partly under construction, to ensure the safety of the water in the inner harbour and to systemise certain quays and waterfronts. Among these may be mentioned the construction of the outer breakwater on the Molo San Vincenzo and the extension of the outer breakwater parallel to the Granili beach, both of which are practically terminated. The outer breakwater, at the mouth of the port, between the San Vincenzo Mole and the Antemurale, is built on a bed of stones reaching 11.50 metres under the average sea level. The substructure which lays on this bed of stones is formed in its transversal section of a pile of blocks measuring each 12 metres in length, 4.60 metres in breadth and 4 metres in height. Each block symmetrically in respect to its axis has two section wells of 1.80 by 1.80 metres at the distance between axis and axis of 6.60 metres. The wells are filled up and form a monolithic column, which, connecting the blocks one to the other, increases the stability of the substructure. The blocks weigh 400 tons each, which means the largest weight adopted up to the present, and they are laid down by the pontoon Romanus, which has been built specially for this purpose. In the outer part the bottom of the substructure is protected by a pile of blocks measuring 5 by 3 by 2 metres. The

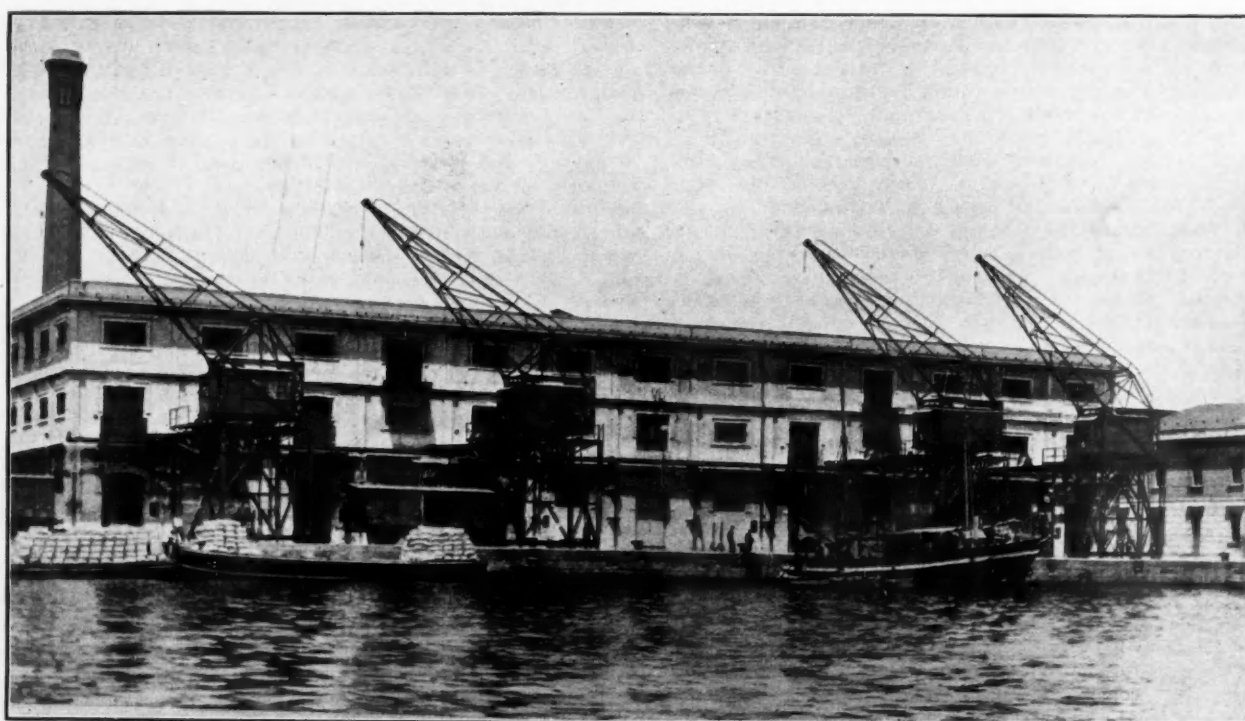
Port of Naples.



Wireless Station at the Port of Naples.



An Oil Tanker discharging Oil at the Vigliena Jetty.



New Electric Cranes on the Porta di Massa Quay.

The Port of Naples—continued.

emerging plan of the substructure is at 0.50 metres from the level of the sea, and on this the superstructure is laid down. The cost of this work has reached 47 million lire.

The extension of the breakwater parallel to the Granili beach has a substructure laying on a stone bed at 10.50 metres under the sea level, and it is formed of two piles of cellular blocks. Each block is 9 by 5 by 2.30 metres and is divided into two cells of 3.50 by 3.50 metres. The cost of this work has reached 34 million lire. Furthermore, there are under construction several quays on the Marinella beach, etc., and several 3, 4 and 5-ton cranes on the Sacramento quay and 1.5-ton and 3-ton cranes on the Molo Cesario Console.

With the accomplishment of these works the quayage in the port of Naples will reach 7,300 metres.

This does not, however, settle the question of the port facilities, as it is claimed that the construction of a large dry dock measuring 321 metres in length and 30 metres in breadth is required, and for which Ing. Luigi Greco, who is attending to the harbour enlargement works, has prepared a very interesting project, and recently Senator Del Carretto, formerly Lord Mayor of Naples, raised the question in the Italian Senate and particularly pointed out that the largest ships of the world are calling at Naples on pleasure cruises and may require repair work.

*Ribble Navigation.**Report by Mr. Merriweather, General Traffic Manager of Ribble Navigation.*

The number of vessels dealt with during the year ended March 31st, 1930, was 1,177, with a total nett registered tonnage of 450,330. Of this number, 245 vessels arrived from foreign ports with an average n.r.t. of 1,098.

Similar figures for the year ending March 31st, 1929, show that there were 1,087 vessels, n.r.t. 397,244. Of this number, 227 vessels arrived from foreign ports with an average n.r.t. of 1,029. It will be seen, therefore, that during the year ending March, 1930, there was an average improvement in n.r.t. of vessels of 69 tons per vessel when compared with the previous year.

Similar figures for 1914 show that we dealt with 1,481 vessels, n.r.t. 204,884; 190 of these vessels were from foreign ports, with an average n.r.t. of 723 tons. So that since the war the average foreign vessel has increased by 375 n.r.t.

Another feature in regard to vessels is the fact that of the 90 more vessels dealt with during the last financial year, 35 vessels were of a draft of 17-ft. and up, and the following figures show the number of vessels, with such drafts and over, handled during the year ending March, 1930, as compared with the previous year and 1914:—

feet	1930	1929	1914
17-18	68	46	31
18-19	46	43	10
19-20	21	21	3
20-21	7	2	0
over 21	6	1	0

Then we have such cases as large vessels coming with part cargoes which have to confine their tonnage to meet the draft of water which is safe for docking. For instance, in May and June this year we have had two part cargoes of timber and 2 of petrol in vessels that could have been fully accommodated in the dock with their full cargoes had we had a sufficient depth of water in the river channel.

This clearly shows that the river has not only improved, but that it is being maintained to a depth which enables us to deal with the larger number of vessels of deeper draft, and this is being done without the delays and lightering which used to obtain frequently in years gone by. It also indicates that the larger type of vessel is on the increase, and will have to be catered for if we are to retain and improve our trade, and especially is this so with steamers from the Baltic. As our chief business is mainly in this direction, it is imperative that we should see to it that such vessels as are employed can be safely dealt with and docked here.

The total imports for the year, 672,458 tons, are a record, except for the year in which there was the general stoppage, when our imports were considerably increased by the importation of coal and coke.

There are one or two interesting facts to which I ought to draw attention. The import of wood pulp has never been exceeded in any previous year, and I think it very satisfactory that for this year this traffic has passed the quarter of a million tons mark, the exact total being 251,776 tons. Then with regard to petrol, here again we have a satisfactory increase, the total of 103,199 tons not having previously been exceeded, and it has to be remembered that it was only in 1923 that the import of petrol commenced to any appreciable extent, when for that year the total was 3,661 tons, so that in seven years this traffic has increased by no less than 100,000 tons. In connection with this importation, I might say that the various companies have now provided accommodation to store about 27,500 tons, or an equivalent of approximately 8½ million gallons, and there is no doubt that this will continue to increase as time goes on, owing to the geographical position of the port as a distributing centre in

conjunction with the large area which can be easily served in the immediate hinterland. The timber imports have not created any record, the largest quantity being imported in 1928—159,502 tons. The import for the year ending March, 1930, was 144,154 tons, which was approximately 22,000 tons more than the previous year. The import of grain has shown an improvement of 6,525 tons. In the main this increase is due to the installation by Messrs. Pyke and Sons of the grain elevator, the bulk of the import being for their account.

With regard to live stock, this year completed the first full year of the running of s.s. "Lady Heath," the new steamer which replaced the "Lady Brussels" a little over twelve months ago. It will be remembered that as the result of this larger steamer being put on the service the lairage had to be extended. The result is that the imports of live stock have increased by 23,482 animals when compared with the previous year, and justifies the committee in providing the money for the additional facilities referred to. The only other expenditure of note during the year has been the provision of additional shed accommodation for timber, this being completed in September, and by the end of November the whole of it was occupied. In connection with the under cover storage of timber, there is a continued demand for such accommodation, and it may be that I shall again have to ask you to provide further facilities of this description in order to meet the requirements of the timber trade.

With regard to exports, the total for the year was 170,882 tons, which was a decrease of 1,027 tons on the previous year, this being entirely due to the less quantity of coal and coke shipped during the year. It is a fact that we have not yet recovered our position in so far as shipments of coal and coke are concerned, which we occupied prior to the coal dispute in 1926, and from what I can see at the moment the position of the trade is such that it will probably be some time before we get back to normal conditions.

Turning to the financial side, the income for the year was £246,297, which was the highest total that has been reached in the history of the undertaking, the previous highest being 1926-27, when the revenue amounted to £239,364. Compared with the previous year, the increase in income amounts to £31,739. On the expenditure side, £7,466 more was spent on dredging than in the previous year, whilst the additional expense on labour amounted to £11,912, due to the increased import previously referred to.

In this year the operation of the Re-valuation Act came into operation, and in connection therewith relief which had to be allowed in respect of de-rating. This was effected by the reduction of 6½ per cent. on dock rates on cargo, whilst at the same time an increase of £965 had to be found to pay the increased rates levied on the new valuation basis.

In total the working expenses amounted to £184,189, as against £166,867 for the previous year, leaving a gross surplus of £62,108, or £12,385 more than the previous year. The sum of £86,082 was required to provide interest and sinking fund charges, this being £376 more than in the previous year, and although £2,428 was paid in respect of capital expenditure owing to our having no further borrowing powers, the deficiency for the year totalled to £26,402, compared with £36,284 for the previous year.

The amount spent on capital expenditure during the year was only £11,888, but £2,428 of this was debited to the revenue account.

As already stated by Mr. Barron, the whole of the borrowing powers granted for the general purposes of the undertaking have been exhausted, and until fresh powers are sought and granted further capital expenditure for this purpose will require to be taken from revenue, which, if heavy expenditure has to be faced, may result in a serious addition to the rate in aid.

Ribble Navigation—continued.

The total capital outlay of the undertaking at the end of March, 1930, was £1,864,427. The amount redeemed by the operation of the sinking funds amounts to £670,744, leaving the debt outstanding £1,193,683.

The nett revenue of £62,108 was therefore equal to slightly over 5 per cent. on the debt outstanding.

It may be interesting if I give some idea of advantages reaped by the town in general as a result of our operations.

First there is employed in all its branches approximately 700 casual dock workers. The Corporation directly employ 331 permanent and 16 casual men, or a total of 1,140 men. In addition there are 34 employers of labour employing men in connection with the business of the dock. These firms together employ a further 410 men of various grades, so that we get a total of 1,550 men being employed as a direct result of our undertaking.

These men receive in wages approximately £220,000 per annum, the bulk of which finds its way into various business and pleasure premises of the town.

Then to assume that two-thirds of these men are married. They will require housing facilities, say 1,000 houses are necessary, and the rateable value of such houses, based on as low an average as £10, would mean £6,000 per year paid in rates, apart from water. In fact, you have a population of roughly 5,000/6,000 people whose livelihood is dependent upon the dock undertaking.

As to the future, it is needless to say that trade generally is in a very serious state, and in view of this the marvel is that we have been able to show such a satisfactory result during the last year, but I am afraid that for the year commencing as and from April 1st things do not look quite so hopeful. The timber trade is most unsettled, due to the difficulties of negotiation for the Russian market, whilst the pulp importers are being requested by the various paper mills to postpone shipments to a later date. Therefore all the evidence I can obtain clearly indicates that the coming year will not be quite so satisfactory. On the other hand, the petrol trade appears to be flourishing, and we are anticipating further extensions in this direction. As you are aware, we have recently let about 2 acres of land to the Ebano Oil Company, who propose to put down tanks for the purpose of importing hot bitumen. This installation is now

being erected, and I have no doubt that in about two or three months it will be working, thus providing an additional source of revenue. I have been endeavouring to foster one or two regular lines, both coastwise and Continental, and whilst my efforts up to the present have not been successful, I am hopeful that if and when trade improves we shall be able to report progress in this direction. If traders whose interests are so situated geographically to secure the economic advantages of passing their goods through this port would insist upon their goods being so consigned, I have no doubt that sufficient business might be obtained to encourage shipowners to look more favourably upon the port for these regular services, and I have the assurance of one or two firms that if sufficient business can be obtained there would be no difficulty in making Preston a port of call for these regular services.

My thanks are again due to the staff, both permanent and casual, for the way they have carried out their duties during the year. There have been no difficulties and everything has passed off without any hitch with the various employees, and the casual labourers have more or less had sufficient work to give them a reasonable livelihood.

Comparison of Imports, Exports and Revenue, 12 months ended March, 1914, 1928, 1929 and 1930.

	Imports tons	Exports tons	Total I & E tons	Revenue £	No. of vsls.	N.R.T. 294,884	Average N.R.T. per vessel 199.111
1914	540,251	213,399	753,590	77,309	1,481	294,884	199.111
1928	624,003	153,722	777,725	229,970	1,118	390,038	348.871
1929	588,536	171,909	760,445	212,162	1,086	397,244	364.865
1930	672,458	170,812	843,340	243,901	1,177	450,330	382.600

	Imports tons	1914 tons	1928 tons	1929 tons	1930 tons
Wood pulp	...	152,387	209,091	207,716	251,776
Timber	...	85,384	159,502	122,651	144,154
Petrol	...	0	83,221	97,570	103,199
China Clay	...	50,182	39,305	35,414	37,576
Stone	...	88,934	63,135	55,470	69,386
Grain	...	31,553	6,722	10,914	17,439
Pyrites	...	6,864	0	5,316	6,882
Esparto	...	1,757	5,225	6,777	8,337
Cement	...	7,356	13,390	9,935	9,267
General	...	60,113	15,697	11,157	9,182

Belfast Port Affairs.

Belfast as an Air Port.

SO many conflicting statements have been made regarding the attitude of the Belfast Harbour Board towards the proposal to establish an aerodrome at the port that Mr. R. E. Herdman, D.L., the Chairman of the Commissioners, did well at the meeting on the 2nd Sept. to give the whole facts. These showed that not only has the Board done everything possible to facilitate the National Flying Services, Ltd., which is at the back of the scheme, but had actually offered inducements lavish in their generosity.

Mr. Herdman said that in April, 1929, the Board was approached by the National Services, Ltd., as to whether the Commissioners would be disposed to grant the use of about 60 acres of reclaimed land as a site for an aerodrome. The reclamation of the land involved a considerable outlay of money, but although the land was comparatively flat and level the National Flying Services, Ltd., required the Board to spend an additional sum of £6,000 in surfacing, draining and fencing the land and in constructing an additional roadway.

The Commissioners, however, offered to carry out the work asked for and to grant the use of the land for a period of ten years, subject to the annual charge of £600, which sum did not allow for any rent whatever, in the ordinary sense of the term, for the use of the land, but was merely a charge to cover what one might call out-of-pocket expenses.

In view of the capital the Board was asked to expend the sum of £600 per annum was the lowest figure which the Board could accept, but that charge would not fall altogether on the Flying Services Company, as the Ulster Government had offered to make an unemployment grant to the Board. The grant was estimated, on the basis of the capital expenditure to be incurred, at £150 per annum. The charge to National Flying Services would therefore be about £450 per annum, but all the Services Company had offered so far to pay was £250 per annum.

The Board did not propose to levy any landing fees for the benefit of the Board, but the Commissioners were prepared to allow the Services Company to collect and retain all landing fees on the understanding that such fees were similar to those in operation at other public aerodromes, and that the aerodrome would be available as a public aerodrome to all parties desiring to make use of it, whether affiliated with or under the control of National Flying Services, Ltd., or not.

The Board's terms were communicated to the company in September last year, and although a year had elapsed the Board had not heard anything further from the company. He thought he was justified in saying that the Board had treated the matter in a most generous and public spirited way from the beginning and had gone to the utmost limit the powers of the Commissioners would permit them to go.

The only way in which he could see that the Board's charges for the use of the land might be reduced would be for National Flying Services to curtail its requirements so that a smaller expenditure by the Board would suffice.

Mr. McCaughey said the members were greatly indebted to the chairman for his detailed statement, which, it was hoped, would have the fullest publicity, in view of the misunderstanding that apparently existed in the minds of the public generally.

Increase in the Traffic of the Port.

Another striking increase in the traffic at the port of Belfast was reported by the harbour master (Captain McIntyre) at the meeting of the Harbour Board on the 2nd Sept.

The report showed that 340 vessels arrived at the port during the period extending from the 17th to the 30th August, made up as follows: coastwise and cross channel 313, foreign 23, non-trading 4.

The total tonnage of the vessels which arrived from the 1st January to the 30th August was:—Coastwise and cross-Channel, 1,890,274, an increase of 194,310 over the corresponding period of last year; foreign, 472,344, an increase of 62,751; non-trading, 81,775, an increase of 31,041; grand total, 2,444,393, an increase of 288,102.

Activity at London's Ocean Passenger Centre.

During the week ended 30th August over 2,000 passengers were embarked on or disembarked from the eleven vessels which called at the Tilbury Passenger Landing Stage.

The vessels represented five of the best known shipping lines, the Orient, Blue Star, British India, Swedish Lloyd and Nippon Yusen Kaisha, plying between widely different parts of the world.

Hundreds of bags of mail and baggage were handled, as well as a number of motor cars.

The Harbour of Saint John, New Brunswick.

Report of the Harbour Commissioners for the Year 1929.

THE results of the operation of the port of Saint John during 1929 were most encouraging. A comparison of the statistics covering imports and exports, and vessels arriving and departing, during the year, will show a very decided increase over the previous year. The arrivals and departures of trans-Atlantic vessels have surpassed all past records, the number of the deep sea class, 1,282, being 314 more than in 1928.

During the busy shipping season, as in the past, considerable congestion, and consequent delays to shipping, was experienced. This condition, unfortunately can only be remedied when the new piers, one of which is now under construction, are completed.

The gradual annual increase in traffic fully justifies the action of the Board in preparing plans and proceeding with the construction of new piers, which will practically double the present available facilities. The new work, when completed, will comprise two piers, each 1,250-ft. in length by 300-ft. in width; one quay wall, 1,250-ft. long, a total berthing space of 6,250-ft., with a depth of 35-ft. below low water; and a grain elevator of three million bushels capacity. The piers will be equipped with modern fire-proof transit sheds, with grain conveyor galleries on each pier. There will be constructed on the piers adequate railway sidings serving the transit sheds and face of piers. Provision will be made for industrial warehouses, which will also be served with railway sidings.

Grain Shipments.

The quantity of grain shipped during the winter season far exceeded all previous comparative periods. For the first four months of the year, upwards of fifty per cent. more grain was shipped than in any other comparative period. Unfortunately, owing to the wheat marketing conditions, there were practically no shipments in November and December, which accounts for the total not exceeding that of the previous year.

Banana Trade.

An important addition to the shipping of the port was inaugurated by the United Fruit Company's importation of bananas. This company decided, when the Dominion Government removed the duty of fifty cents a stem on bananas grown in British possessions and imported direct into Canada, to make all their Canadian shipments through Canadian ports. After examining the conditions at other ports, they decided that the facilities offering at the port of Saint John were most suitable for their requirements, and accordingly a weekly service was inaugurated, the first United Fruit boat, with upwards of thirty thousand stems of bananas, entering the port on the 9th of May. The service, after being in operation for a very short time, was found quite inadequate for the trade, and the company was therefore obliged to increase the service to two boats a week. These were continued on a regular sailing schedule until the winter set in, the last boat arriving on the 28th of November.

In addition to bananas, grape fruit, cocoanuts and other produce of the West Indies were imported. While the return cargoes have been light, the trade gradually increased, and it is anticipated that eventually an important market with the West Indies will be developed.

Marine Insurance and the inclusion of Saint John in the North Atlantic Chartering Range.

Canadian Atlantic ports have, in the past, been at a great disadvantage in competition with American ports to the south, chiefly on account of extra marine insurance rates on hulls and cargoes, and also due to not being included in the North Atlantic Chartering Range.

Repeated efforts have, for a number of years, been made by various government authorities and shipping interests to have this discrimination eliminated. The first relief was obtained in 1925, when on representations made by the Imperial Shipping Committee, the Joint Hull Underwriters reduced the additional insurance premium on hulls to the port of Saint John by one-half. While this reduction in the insurance rate was a measure of relief, it was felt that Saint John was still seriously handicapped in competition with American ports.

During the month of February, Mr. Gray, General Manager, appeared in London before the Imperial Shipping Committee, and the Joint Hull Underwriters, in order to present the case of the port of Saint John.

At the various conferences in London, there were submitted complete statements of the large improvements made in Aids to Navigation in the Bay of Fundy, together with statistics showing the absence of wrecks over a period of years, and the

very large and important part the Port of Saint John takes in handling the bulk of the overseas Canadian tonnage during the period when the ports of Montreal and Quebec are closed.

The Imperial Shipping Committee was impressed with the claims presented on behalf of the port, and it accordingly strongly recommended to the Institute of London Underwriters, the Liverpool Underwriters Association and Lloyds Underwriters Association that the additional insurance premium on hulls to the port of Saint John should be eliminated, the result being that the Joint Hull Committee added the following note to the North American Agreement (1929).

"No additional premium to be charged for vessels calling at Saint John, New Brunswick, if properly fitted with and equipped for the use of wireless direction finding apparatus."

This would appear to be, meantime, a reasonable settlement of the question, as practically all vessels to-day are equipped with wireless direction finding.

There only now remains, in order that this port may be on a parity with other Atlantic ports to the south, the inclusion of Saint John in the North Atlantic Chartering Range.

The term "North Atlantic Range" is used in chartering tramp vessels for carrying grain, the principal advantage being that the charterer has the option of specifying any port within the range at which he wishes to load. The Canadian Atlantic ports are not included in the "North Atlantic Range." The ports included originally were all ports south of Boston. Subsequently, Boston and Portland were added. It is most essential that ports, to be included in the range, must be on a parity both as regards risk of demurrage and working expenses in the port.

It is very difficult for a Canadian port, which relies for revenue entirely upon steamship services, to reduce or eliminate rates to meet the competition of American ports, which are, in a large number of cases, controlled or subsidized by railway companies operating on a highly competitive basis.

It would appear, therefore, that until our extensive construction programme is completed, and ample accommodation provided for any likely seasonal increase in shipping, the question of being admitted to the chartering range will have to be left in abeyance.

The successful result of the negotiations in London is largely due to the valuable assistance and advice given by the Honourable Peter C. Larkin, High Commissioner, who personally attended all the meetings of the Imperial Shipping Committee.

General Repairs.

In addition to the usual general repairs to the wharves and sheds, etc., considerable renewals were made. The rubber belting in conveyor galleries Nos. 5, 6 and 15, for a length of 3,045-ft., was renewed, and the mechanical equipment in these galleries overhauled and put in first-class working condition.

The fittings in the major portion of the cattle shed were removed, concrete floor put down, and the shed put in condition for the storage of fertilizer. This extra storage very largely did away with the congestion experienced in previous years in the handling of fertilizer through the port.

At Long Wharf a two-storey addition was made, providing offices for steamship companies, rest rooms and other conveniences for the longshoremen. The offices are equipped with hot water heating, and this improvement goes a long way towards removing fire risk at this shed, as previously there were several independent small offices, using open stoves for heating.

In order to provide suitable accommodation for the West Indies passengers arriving by the Canadian National Steamships, heated baggage and customs examining rooms for passengers, with offices at one end, were erected inside McLeod Shed. Previous to this accommodation being provided, the passengers and baggage were examined, at considerable inconvenience, in the open shed.

Dredging.

Deep Water Berths.—Dredging was performed at the various Deep Water Berths on both sides of the harbour. This work was carried out during the months of June and July, and the total quantity dredged amounted to 61,000 cubic yards, giving a depth of 32-ft. below low water at all the berths.

Entrance Channel.—Surveys were carried on during the summer to ascertain the amount of dredging required to straighten and improve the harbour entrance channel. Plans and estimates have been prepared and recommendations made

The Harbour of Saint John, New Brunswick—continued.

to the Department of Public Works to have the necessary dredging performed, in order that the above improvement may be carried out.

New Facilities.

The work on Contract No. 1, for the construction of a pier, 800-ft. long by 300-ft. wide, together with the necessary dredging, was continuously proceeded with during the year. The cofferdam, enclosing an area of approximately thirty acres, in order to do the necessary submarine rock excavation and build the pier in the dry, is practically completed. Up to the 31st of December, about 500,000 cubic yards of earth and rock excavation, and 400,000 cubic yards dredging have been performed.

Work on Contract No. 2, for the construction of the elevator, is well advanced. The concrete work is fully completed, and the receiving house partially completed. The construction of the shipping house is being delayed until the completion of the cofferdam, so that the bulkhead wall of the new pier will be fully constructed before proceeding with this work.

On Contract No. 3, construction of conveyor gallery to No. 7, the work is 75 per cent. completed, and the galleries were expected to be in operation by the 1st of March, 1930.

Considerable progress has been made in the acquisition of the necessary properties required for the railway sidings and approaches to the new pier. A great number of the buildings, as acquired, have been demolished. This work, of necessity, is slow, as it takes some time for a large number of business and private dwellings to be replaced in some other section of the city.

Harbour Bridge.

Plans have been prepared and negotiations carried on with the Canadian National Railways, the City of Saint John and

other interested parties, for the construction of a joint highway and railway bridge across the harbour in the vicinity of Navy Island. This bridge will serve a dual purpose—it will give the Canadian National Railways access to the West Saint John terminals on a parity with the Canadian Pacific Railway, and it will also eliminate the harbour ferry, and thus make available for further development, the space now occupied by the ferry services.

Lieutenant-Colonel Alex. McMillan.

The Commission sustained a heavy loss in the death of Lieutenant-Colonel Alex. McMillan, Commissioner, Colonel McMillan was appointed Commissioner at the inception of the Commission and served until his death, 25th June, 1929. Colonel McMillan having been, during his whole life-time, very keenly interested in the public affairs of the city, and more particularly in the building up of the port and the development of trans-Atlantic shipping, his advice on the organisation and policy of the Board was most invaluable. The colonel was most considerate and sympathetic in his relations with all with whom he came in contact, and his untimely death was a decided loss, not only to the Commission, but also to the various enterprises with which he was connected.

Commissioner B. M. Hill.

By order-in-council P. C. 2488 of 21st December, 1929, Mr. B. M. Hill was appointed Commissioner to fill the vacancy on the Board due to the death of Colonel McMillan.

Finance.

Income for the year amounted to \$341,816.89, whilst interest, operating and administration expenses were \$323,800.27, and showed a net profit on the year's working of \$18,016.62.

Aden Port Trust.

The returns for the month of July, 1930, of shipping using the port are as follows:—

	No.	Tonnage.
Merchant vessels over 200 tons	131	511,197
Merchant vessels under 200 tons	7	1,230
Government vessels	5	11,421
Dhows	38	887
PERIM.		
Merchant vessels over 200 tons	31	106,471

was Rs.41,68,000 as compared with Rs.62,51,000 for July, 1929, and of exports Rs.32,07,000 as compared with Rs.41,30,000.

The total value of both imports and exports together was Rs.73,75,000 as compared with Rs.103,81,000 for the corresponding month last year.

Imports during the month were above those for July, 1929, in the case of coffee, gums and resins, hardware, seeds and tobacco (manufactured); and below in the case of grain, pulse

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	0	0	0	0
Coffee	Cwts.	7,738	2,90,261	5,199	2,53,748
Grain, Pulse and Flour	"	29,740	2,25,392	12,452	91,782
Gums and Resins	"	1,198	31,202	1,899	53,593
Hardware	"	0	18,502	0	11,220
Hides, raw	No.	3,167	7,010	3,121	7,820
Oil, Fuel	Tons	25,727	7,71,810	0	0
" Kerosene	Gls.	23,192	17,396	18,072	13,554
" Petrol	"	30,512	38,483	896	1,122
Salt	Tons	0	0	20,550	1,98,650
Seeds	Cwts.	2,576	30,195	213	3,737
Skins, raw	No.	312,340	2,02,553	438,140	5,29,020
Sugar	Cwts.	4,926	37,776	12,113	85,772
Textiles—					
Piece Goods, Grey	Yds.	2,140,695	5,53,745	2,712,655	4,36,630
" White	"	351,313	97,337	175,540	39,622
" Printed or Dyed	"	392,605	1,18,317	601,675	1,68,761
Twist and Yarn	Lbs.	183,300	1,38,775	191,900	1,52,150
Tobacco, Unmanufactured	"	511,324	1,13,580	522,956	1,40,944
" Manufactured	"	54,320	56,897	38,220	47,939
Other Articles	No. of Pkges.	56,626	8,20,293	14,190	4,64,454
Treasure, Private	—	0	5,95,600	0	4,91,885
Total	—	—	41,68,184	—	32,07,406

The number of merchant vessels over 200 tons that used the port in July, 1930, was 134 as compared with 130 in the corresponding month last year, and the total tonnage was 511,000 as compared with 532,000.

Excluding coal, salt, fuel oil, military and naval stores, and transshipment cargo, the total tonnage of imports in the month was 6,400 and of exports 3,700 as compared with 7,900 and 4,800 respectively for the corresponding month last year.

The total value of imports, excluding Government stores,

and flour, hides (raw), skins (raw), sugar, piece goods (grey, white and printed or dyed), twist and yarn, tobacco (unmanufactured), and treasure private.

Exports were above those for July, 1929, in the case of skins (raw), sugar, piece goods (printed or dyed), tobacco (manufactured), and treasure private; and below in the case of coffee, grain, pulse and flour, gums and resins, hardware, hides (raw), seeds, piece goods (grey and white), twist and yarn, and tobacco (unmanufactured).

The Port of New York.

Latest Data issued by the Bureau of Commerce.

Heavy Steamship Travel via Port of New York.

THE supremacy of New York as a passenger port was emphasized on Wednesday, July 16th, when four of the world's largest vessels, the "Leviathan," "Majestic," "Berengaria," and "Bremen," sailed for Europe with an aggregate of 6,000 travellers aboard, more passengers than depart in an entire month from all other North Atlantic ports combined.

For the first six months of this year the total number of steamship passengers carried between New York and foreign ports was slightly ahead of the same period last year. A drop of 6.3 per cent. in inbound traffic was offset by 9 per cent. increase in outbound movement, chiefly non-emigrant aliens returning to their native lands.

	Six Months Ending June 30th, 1930	Six Months Ending June 30th, 1929
Inbound		
Aliens, Immigrant	69,594	79,670
Non-Immigrant ...	56,394	60,531
U.S. Citizens ...	105,849	107,303
Total	231,837	247,504
Outbound		
Aliens, Emigrant	14,159	15,901
Non-Emigrant ...	68,535	49,286
U.S. Citizens ...	118,058	118,196
Total	200,752	184,083
Inbound and Outbound Total	432,589	431,587

The North German Lloyd announces that in the first year of operation the "Bremen" has carried a total of 54,153 passengers in seventeen voyages.

Passenger Traffic via Domestic Steamship Routes.

Passengers sailing between the Port of New York and other United States ports on the Atlantic, Gulf and Pacific Coasts, including Long Island Sound and Hudson River routes, reached the total of 279,674 during the second quarter of the year, April to June inclusive.

The total passengers carried on domestic steamship routes for the first half of the year reached 404,283, not far below the foreign travel. These figures do not include one-day round-trip excursionists carried by Sound and River Lines.

Value of Foreign Commerce at the Port of New York.

The value of foreign trade continues to be less than a year ago. Imports and exports during June, 1930, amounted to \$224,620,000 as against \$319,739,000 for the same month last year, a decline of \$95,119,000, or 30 per cent.

Imports were \$119,555,000 as against \$167,848,000, a decrease of 29 per cent., and exports were \$105,065,000 compared with \$151,896,000, a decrease of 31 per cent.

Foreign Commerce Tonnage at Port of New York.

Tonnage statistics of foreign trade are sometimes a more useful indicator than value figures because of the wide fluctuations in unit prices of commodities entering into import and export trade. The January 1930 Commerce Bulletin reported the total of 27,889,000 long tons handled through the Port of New York for the fiscal year ending June 30th, 1929. A more recent report of the United States Shipping Board, which is the source of these figures, carries a revised total for that period of 28,528,314 tons. The revised total represents an increase of 11.1 per cent. over the tonnage for the fiscal year 1928, which was 25,672,840 tons.

	Fiscal Years		Net Change	
	1929	1928	Amount	Per Cent.
Imports ...	17,083,453	14,674,899	2,408,554	16.4
Exports ...	11,441,861	10,997,941	446,920	4.1
Imports and Exports	28,528,314	25,672,840	2,855,474	11.1

In tonnage the commerce at the Port of New York during this period constituted 25.7 per cent. of the total for the United States as a whole, this being somewhat better than the average for the post-war period.

Principal tonnage gains occurred in the imports, notably petroleum, which increased 1,509,000 tons or 50 per cent.; rubber which increased 25 per cent., and sugar, 15 per cent.

Among the exports the largest gain took place in motor vehicles—331,000 tons, or 48 per cent.; non-metallic minerals (asphalt, cement, sulphur, etc.), 42,000 tons, or 28 per cent.; rubber products 22 per cent.; provisions 16 per cent., refined sugar 16 per cent., metals and manufactures 15 per cent.

There were some decreases in specific commodity groups ranging from 3 to 5 per cent. on imported fruits and nuts, coffee, drugs and chemicals, and as high as 10 per cent. on exported textiles, and 20 per cent. on exported petroleum products.

Commerce at Port Newark.

Port Newark is an integral part of the Port of New York and its commerce is included in the statistics for the port as a whole. However, through the courtesy of the officials of the City of Newark, separate statistics for this section are made available each month. During the month of July, 1930, 12,427,000 board feet of lumber and 2,740 tons of general merchandise were discharged from twenty-six vessels at Port Newark.

Lumber Trade Falls Off.

Receipts of lumber at Port Newark, mentioned above, which may be taken as an index of the lumber business of the entire port, reflects the depression in building activity as contrasted with 1929. The receipts at Port Newark for the first seven months of 1930 were 164,310,000 board feet, or 34 per cent. less than the same period in 1929.

Residential building activity in New York and northern New Jersey, which creates a large demand for west coast lumber, is considerably less than a year ago. According to the reports of the F. W. Dodge Corporation, contracts for residential building in this area during the first seven months of 1930 totalled \$170,990,600 as against \$379,648,000 during the same period in 1929, a decrease of 55 per cent. Builders and the lumber trade throughout the country appear to be experiencing the same condition.

Vessel Movements in Foreign Trade.

The number of vessels in foreign trade clearing from the Port of New York during July was greater than in the same month last year. The number of entrances was less. The net tonnage in both entrances and clearances was greater than in July, 1929.

	July 1930		July 1929	
	Number of Vessels	Vessel Tonnage	Number of Vessels	Vessel Tonnage
Entrances ...	576	2,717,787	596	2,709,120
Clearances ...	616	2,915,333	593	2,603,439

Increased Steamship Sailings.

Notwithstanding the world-wide depression which has prevailed for some time in the shipping industry, foreign sailings from the Port of New York for the month of July registered an increase over the same period last year. Direct foreign sailings were almost 3 per cent. more numerous this year, with most of the increase taking place in the Caribbean-Mexican trade.

In the domestic trade a growth in the number of coastal tankers using this port is to be noted, sailings of this type showing a 30 per cent. increase.

New Port Facilities.

The Hoboken Land and Improvement Company has awarded a contract for the reconstruction of the bulkhead at the foot of 15th Street, Hoboken, which was destroyed by fire last spring; approximately \$200,000 is to be expended on this work. Bids will soon be asked for the rebuilding of Pier 14 which was severely damaged. The rebuilt portions of the pier will be steel and fireproof throughout.

The United Dry Docks, Inc., are expanding their facilities at Mariners Harbour by the addition of a 12,000-ton dry dock. This is intended to serve the increasing number of oil tankers that operate in the Kill von Kull. The new dock is 549-ft. long and can dock all but a few of the largest tankers.

The Todd Shipyards Corporation is improving its facilities at Erie Basin. Provision is being made for a new slip extending 555-ft. inshore between piers 4 and 5. It will have a width of 158-ft. and a depth of 40-ft. Both piers 4 and 5 have been rebuilt and pier 2 has been widened. A new 20-ton travelling gantry crane has been installed and the machine shop enlarged.

An addition has been made to the Clinton Street Plant of the Corporation by providing a floating dry dock 265-ft. long and 84-ft. wide.

The Hoboken plant has had its capacity increased. The lifting capacity of Docks, 2, 5 and 6 has been increased by the installation of new centrifugal pumps.

The Port of New York—continued.

The Tebo plant at Erie Basin has also been enlarged. Pier A has been extended 300-ft. and the slip between Piers B and C has been dredged to allow for a new 6,000-ton floating dock.

New York State Barge Canal.

Cargo tonnage shipped through the State Barge Canal for the season up to July 26th amounted to 387,088 tons in excess of the total for the same period last year.

Barge operators announce a great increase in shipments of copper from New York to Buffalo. It is expected that the tonnage of copper will exceed last season's by about 50,000 tons.

A new item in the canal traffic is represented by the shipment of 12,000 tons of discarded telephone books moved through the canal to Lockport pulp factory.

A New Pier in the Shadow of the Manhattan Skyscrapers.

Pier 5, North River, is rapidly being completed by the New York City Dock Department and will be occupied by the United Fruit Company about January 1st, 1931.

The pier is 695-ft. long and 140-ft. wide, with a 2-storey shed. The total shedded area including the bulkhead is approximately 220,000 sq. ft.

Pier 3 has a slip 250-ft. wide on the south side and 230-ft. wide on the north side, both to be dredged to a project depth of 30-ft. mean low water. The pier is fully equipped with electric light, fire sprinkler and heating system. The sides are enclosed with Peelle ship doors. In addition to the rigid cargo masts the handling equipment includes one electric freight elevator, two electric passenger elevators, two inclined reversible baggage conveyors, and five adjustable inclined steel gravity chutes.

*Irish Harbour Matters.**Dublin Deep Water Berth: Last Caisson Launched.*

THE twenty-ninth ferro-concrete caisson, weighing over four hundred tons, and the last of its kind that will be required to complete the foundation of a new quay at the Alexandra Basin was launched at Tolka Quay, East Wall, Dublin, during the month. This is required to complete the extensive new works which will give the Dublin Port and Dock Board the deepest berthage to be found in any port in Ireland. The launch was carried out under the personal superintendence of the port's chief engineer, Mr. Joseph Mallagh. When finally placed in position the height of this caisson will be increased by 43-ft., and it will displace about 400 tons of water. The caisson is 50-ft. in length by 30-ft. wide.

It is expected that the Board will start the reconstruction of Butt Bridge early in the autumn.

Cork Harbour Imports and Exports.

A return of imports and exports at the Port of Cork during the second quarter of this year provides some food for reflection. The figures as submitted to a meeting of the Cork Harbour Commissioners are as follows:—

				Tons	Tons
				1930	1929
IMPORTS.					
BACON					
Including 13 tons foreign and sundries				267	258
PIGS' HEADS					
Cross Channel				285	
Foreign and Sundries				485	
Sundries				6	
				776	884
SUPERPHOSPHATE					
Cross Channel, all foreign				370	
Irish Coasters				369	
				739	2,052
FLOUR					
Cross Channel				4,579	
Foreign				755	
				5,334	3,874
EXPORTS.					
BACON					
Cross Channel				1,009	
Foreign				Nil	
Irish Coasters				58	
				1,067	1,416
BUTTER					
Cross Channel				5,225	
Foreign				Nil	
Coasters				65	
				5,290	5,229
EGGS					
Cross Channel				3,157	3,167
Foreign				Nil	
PIGS					
Cross Channel				24,664	17,278
Foreign				Nil	

At a meeting of the Cork Harbour Board Mr. R. Wallace, chairman, stated that during the week ended August 16th they had handled and controlled 943 passengers to and from America. He was also glad to mention that the trade between Cobh (Queenstown) and the Continent was growing immensely.

Galway Harbour Developments.

Galway Harbour Commissioners have adopted a £65,000 scheme, submitted by the harbour engineer, Mr. Binns, by which tenders for Atlantic liners will be able to leave the docks

at any stage of the tide. The scheme provides for the deepening of the entry channel to the docks, cutting away of rock in front of the Dun Aengus dock, and the erection of an extensive pier. It is stated that all this will form part of a larger scheme, which already has been submitted by Sir John Griffiths and Sir Cyril Kirkpatrick, consulting engineers for the development of Galway's commercial docks.

It is stated that an effort will be made to obtain the money necessary for the scheme under the Trade Loans Act.

Cobh (Queenstown) as a Laying-up Port.

During the first week in September the s.s. "Prince Robert," a new ship, built at Birkenhead to the order of the Canadian National Steamship Co., arrived at Queenstown (Cobh) to lie up for three months before departing on her maiden voyage to Vancouver. The cost of tying up a vessel in an English harbour for any length of time is almost prohibitive, especially now that there is such depression in shipping industry. Consequently shipping companies have been searching round for cheaper ports and many inquiries have been received by the Cork Harbour Board concerning its scale of dues, charges, etc.

If a ship lying up in Queenstown Harbour intends to make a voyage to, say, Canada, the United States, or New Zealand, dues will be demanded at the rate of one halfpenny per ton on her gross tonnage, but if the ship is returning to England from Queenstown these dues are not demanded, because it is said even a vessel lying up means the spending of a certain amount of money in the town.

Crew Rescued from Ship on Fire.

The Marconi Direction Finder played a valuable part in accurately indicating a distressed ship's position and rescuing the crew when the Swedish motor vessel, "Kronprins Gustaf Adolf," caught fire on July 28th fifteen miles north-east of Barra Do Rio Doce Lighthouse, on the Brazilian coast. Her wireless distress calls brought immediate reply from the Lamport & Holt liner, "Vandyck," which was 45 miles south of the position given in the distress call, but proved to be 70 miles from the actual position of the ship.

The position given was regarded as doubtful by the "Vandyck" and full reliance was placed on the ability of the Marconi Direction Finder to determine accurately the bearing of the "Kronprins Gustaf Adolf" from the "Vandyck."

After steaming more than half-an-hour from the time of receiving the distress call, a further message was received from the Swedish ship that assistance was no longer required, but this in turn was cancelled by a further urgent request for help. Once again the "Vandyck" turned to the rescue and the Direction Finder was constantly used to verify the bearing of the Swedish ship. When eventually the Direction Finder bearings brought her into sight dead ahead the inaccuracy of the position originally given was proved.

The captain of the "Vandyck" states in his report:—"In responding to distress signals from the motor vessel, the "Vandyck" was headed in her direction as indicated by wireless bearings from distances up to 65 miles. Bearings were taken at quarter of an hour intervals, and distressed vessel was right ahead when sighted. The accuracy of all bearings taken was absolute."

After "Vandyck" had taken off the crew, the captain and six officers of the Swedish ship decided to return to their ship to await the arrival of a tug, and "Vandyck" therefore continued her voyage with the remainder of the crew.

Notes from the North.

Details of Peel Dock Proposal.

MUCH attention is being given by prominent public men in the Isle of Man to the suggestion that a dock should be built at Peel, mainly for the use during the winter months of the ten steamships of the Isle of Man Steam Packet Co., which are usually berthed at Barrow (Lancs).

Peel has a fine harbour, but this, in the opinion of the town, is not adequate to provide suitable winter harbourage for large vessels. It may be remembered that some little time ago a deputation interviewed chiefs of the I.O.M. Steam Packet Company to discuss with them the new project, which has also been sympathetically received by the Harbour Commissioners, whose chief engineer, Mr. W. H. Blaker, drew up a draft plan of the suggested dock. The scheme is being placed before His Excellency the Governor. The Peel harbour's narrowest part is at the end nearest the Castle and it broadens out from there to the part nearest the Railway Station and the River Neb. It is proposed to build the dock close to the railway station. The walls of the harbour would, of course, require to be strengthened, but a portion of this has already been carried out, quite apart from the dock scheme. The dock would need to be deepened, but it is not thought this would present any difficulty as there is a mud bottom except for a short distance. There are already on the quay-side a number of warehouses that are not now in use, and these could be easily adapted as dock sheds. In addition there is plenty of space close to the harbour where additional sheds or warehouses could be erected. If, at any future time, additional space is required for extensions, there is plenty of available land close to the existing small dock or wharf. The Isle of Man is a small place and does not possess those deep indentations which make natural harbours. Perhaps the most suitable place for a "lying-up" harbour is Derbyhaven, but it would need a good deal of money spending on it to make it really suitable. The late Captain Moughtin had a theory that a dock could be constructed at Douglas by blasting both sides of the river right up to what is called the Nunnery. As there are buildings on one side of the river and the Castle-town road on the other side, such a scheme would be impracticable on account of the expense.

In Peel, on the other hand, it is only a question of deepening the harbour, strengthening the walls and erecting the wall and gates across, with perhaps a lock. Peel harbour in comparison is a natural harbour, two-thirds of which could easily be converted into a dock, leaving the remaining third for its present use. Peel is built, geologically, upon a raised beach, and upon ground which is largely made up of shingle and porous material, through which there would naturally be some seepage. The river Neb, with its constant inflow, would, however, make up for this. The gates would be erected at the narrow end, and therefore at the minimum of cost, the dock widening gradually towards the river and the railway station. It is stated that eight boats could be comfortably accommodated. Having regard to the tides, depth and other conditions at Peel, it is asserted that the large steamers of the Steam Packet Company will be able to enter and leave the dock during the greater part of the tides, say 18 or 20 hours out of the 24, which would compare well with tidal docks elsewhere. Whilst the suggested dock is not solely an unemployment scheme, there is this to be said for it, it will go some way to relieving an insular problem.

It is not yet at all certain what reception will be accorded the scheme by those who have to foot the bill. The dock would be entirely for the use of the Steam Packet Company, as no other large vessels are in need of "lying-up" berths during the winter. They already enjoy reasonable terms at Barrow. The issue seems to boil itself down to this:—Can Peel offer facilities and charges competitive with those which rule elsewhere.

Stagemaster's Notable Anniversary.

Mr. Robert Owen, of Broadgreen, Liverpool, who recently celebrated his golden wedding, was an assistant stage master at the Prince's Stage. He retired in 1924 after a total service of over thirty-seven years with the Dock Board. During the war he was stage master at Wallasey.

Mersey Training Banks.

Mersey Docks and Harbour Board intends to carry out improvements to the training banks and revetment in Crosby Channel, Liverpool Bay, as soon as circumstances permit. The east side of the bank will be extended to the north-eastward in the form of a sharp curve terminating about 480 yards, approximately 202 degrees, from the Crosby beach mark. The west

side of the training bank will be raised to a height of about 10-ft. above the Liverpool Bay Datum. Taylor's Bank Revetment will be raised to a height of about 5-ft. above Liverpool Bay Datum.

Birkenhead's New Bridge.

Users of the Birkenhead docks can now gain a good idea of the new "rolling bascule" bridge which is to span the Duke Street passage between the East and West Floats, Birkenhead, from a glance at the metal structure already in position. The bridge, which is to be substituted for the present horizontal swing bridge, is different in two ways from existing structures on the Birkenhead docks. It will be the first to be electrically controlled and will also be the only one of the bascule type. Under this principle the whole bridge is raised to a vertical position when a vessel is passing from one dock to another. It will have a span of 100-ft. and its total weight, including 750 tons of ballast, will be in the neighbourhood of 1,100 tons. Unexpected snags were met during the laying of the foundations of this bridge, which is due to be completed early next year. It has been revealed that many old creeks ran under the site of the bridge, and the foundations have had to be made unusually strong. Great pillars of concrete have been sunk. The bridge will be raised and lowered by two electric motors of 45 h.p. Other dock developments include the substitution of five rolling bridges for existing bridges, four at Birkenhead and one at Liverpool. During the time the Duke Street bridge has been under construction the Penny Bridge has been toll free. Users of the docks are now wondering if it will remain so when the new bridge is in position. At the meeting of the local Chamber of Commerce, Mr. J. M. Hignett said that the "Penny Bridge" was opened toll free when traffic was restricted at Duke Street, but at the time the Mersey Docks and Harbour Board made it clear that this was only a temporary measure. They were hoping for such an increase of trade, however, that the Dock Board would be glad to make the bridge toll free permanently.

Manchester Dock and Warehouse Company.

The annual reports of the Manchester Dock and Warehouse Extension Company and the Manchester Ship Canal Warehousing Company come as reminders of the early days of the Ship Canal, and some later ones also, when it was found that the simplest way of equipping the Manchester end of the waterway was to call in independent companies to make the necessary provision and take long leases from them. The net revenue of the Dock and Warehouse Company for the year was £34,545, enabling the payment of 5½ per cent.—the same as for each of the last five years. The net sum available in 1929 was £35,909 and in 1928, £35,862. The Ship Canal Warehousing Company shows a net revenue of £12,595, as against £12,859 a year ago and £12,693 in 1928. The ordinary dividend is 6 per cent.—the same as for each of the last five years.

Record Income.

Ribble dock undertaking during the year which ended on 31st March last yielded an income of £246,297, the highest in the history of the undertaking. The total working expenses amounted to £184,189, and the gross surplus £62,108, or £12,395 above 1928-29. A net sum of £96,082 was required for sinking fund and interest and £2,428 was paid in respect of capital expenditure for which no borrowing powers were held. The deficiency was £26,402, against £36,284 the previous year. The outstanding debt is £1,193,683. Borrowing powers for the general purposes of the undertaking have been exhausted.

Liverpool Dock Railway.

As a result of the extensive alterations to docks near Clarence Dock, Liverpool, and the building of the super power station in the same neighbourhood, the Liverpool Overhead Railway Company has decided to close Nelson Dock Station at 6.30 p.m. each day, but Clarence Dock Station will remain open for traffic until the last train.

Nearly £3,000,000 Spent on Under-river Works.

Evidence of the rapid completion of the Mersey tunnel works is supplied by the fact that on 9th September an inspection of the tunnel, to which the Press and certain public representatives were invited, was made. The opening of the great tunnel for traffic cannot, therefore, be long delayed. The Birkenhead Ferries Committee have had the competitive effect of the tunnel on their undertaking thoroughly discussed. It is not known whether the Wallasey Ferries Committee have as yet considered the matter. The importance of the question cannot be over-rated. The Mersey tunnel will provide the quickest and most direct route, not only to Wirral and beyond, but also to parts of the County Borough of Wallasey, including Moreton.

Notes from the North—continued.

The effect on passenger traffic may prove to be nil, but it is certain the luggage boat undertaking finances will suffer, unless a solution can be found to the problem of freight rates without substantially increasing the losses on the luggage service.

The visitors were accompanied by the joint tunnel engineers (Sir Basil Mott and Mr. John A. Brodie), the engineer in charge (Mr. Hewitt); and representatives of the tunnel contractors, Messrs. Edmund Nuttall, Sons and Co., Ltd., and Messrs. Sir Robert McAlpine. Various items of interest in connection with the tunnel are:—75,000 tons of cast iron have been used so far in its making; the major portion of the work yet to be done will be completed within twelve months, but minor details will occupy another year; a start has been made in providing 4-ft. wide footwalks on either side of the tunnel; the cost of the work completed to date is £2,800,000, or 59 per cent. of the whole; the number of men now employed is 1,600. The position of the under river boundary line between Lancashire and Cheshire is marked in the tunnel at a distance of about 1,750-ft. beyond the Birkenhead quay wall. Some 1,800-ft. beyond the Lancashire-Cheshire boundary line the party reached the lowest point of the tunnel under the river, where there will be a sump to collect water and pumps to raise the inflow to the surface. The spot is indicated by a sign "Centre of River Mersey." With the completion of the segment lining a journey through the sub-river portion of the tunnel is a mild experience compared with that of the days when the workmen were still engaged in cutting the rock, for then the floor inches deep in mud, the electric light winking in the gloom, and the machine-gun rattle of pneumatic drills, suggested nothing so vividly as a hot sector on the Western Front. A portion of the tunnel on the Liverpool side is lined with steel beams covered with concrete and a portion with cast iron segments. This latter type of lining marks the point at which the arch of the tunnel begins to pass out of the sandstone rock into the clay. This part of the tunnel is being constructed by the aid of a roof shield, the largest of the type ever made, 46-ft. 8-in. in diameter and weighing upwards of 200 tons. Designed to run on rollers on specially prepared foundations inside the tunnel, it gives support at all times to the roof and face of the excavation. The shield is moved forward by 24 hydraulically operated rams capable of working at two tons per square inch pressure, and there are hydraulic face rams fitted to operate the sliding platforms which support the face. It is a massive machine and, considering that the ground at the commencement is rock, which needs blasting, and then gradually changes to clay, every precaution is taken to ensure that it will stand up to the heavy duty imposed upon it.

Nine-tenths of the main boring and approach work on the new Mersey tunnel has been completed according to the engineer's report presented at the September meeting of the Tunnel Joint Committee. No less than 97 per cent. of the under river work on the excavation and lining of the 44-ft. tunnel has been finished, whilst on the Birkenhead side only 2½ per cent. of the work remains to be completed on the construction of the full-sized entrance tunnels. Work is now well in hand at five points on the construction of the reinforced concrete roadway and other interior concrete work in the circular cast iron lined tunnel under the river. Over 300 men are employed on this part of the task and 12½ per cent. of the contract has already been carried out.

Historic Dock Locomotive.

Seventy years ago the Mersey Docks and Harbour Board bought from the London and North Eastern Railway Company a locomotive which had been built in 1838, and worked it as a pumping engine at Prince's graving dock until two years ago. This veteran engine was the "Lion," which ran on the original Liverpool and Manchester Railway, and the Dock Board bought it for £400. The veteran is actually going to draw a train once more. It has been undergoing restoration at the Crewe works of the L.M.S. Company and during the Railway Centenary celebrations at Wavertree, Liverpool, was used to pull a train of old-time coaches laden with sightseers.

100 Years Old Lighthouse.

The Rock Lighthouse in the Mersey estuary has just attained centenary status. Its light first shone in its mission of safety on 21st August, 1830, and, flashing as it does every twenty-seconds, has sent out a warning over 175,000,000 times. More generally known as the New Brighton Lighthouse, the Rock stands 89-ft. high. The foundation stone was laid on 8th June, 1827. The lighthouse is constructed of Scotch granite cemented together by a special material brought from Mount Etna. Its light can be seen for fourteen nautical miles. Since 1925, when an automatic lighting system was installed, the lighthouse has been unmanned.

Grain Elevators for Argentine.

Recent reports from the Argentine associating a Manchester firm with a £20,000,000 scheme for the erection of 800 grain

elevators in that country are, it seems, very much exaggerated and misleading. According to a statement by a director of the firm concerned, about eight months ago it was arranged that the firm should prepare a report on the grain elevator problem in the Argentine and this report has now been completed and presented to the proper departments of the Argentine Government. At the present moment the prospect of the orders coming to Manchester is very indefinite, and until the report has been properly considered by the Argentine Government, there can be no question of such orders coming to this country. The published report very much exaggerates the amount of money involved in the elevator scheme.

Erosion of Mersey Lands.

The Unemployment Grants Committee have signified that they are prepared to advance £90,000 to Lancashire and Cheshire towards the £150,000 required for the cost of the scheme to prevent the erosion of the Mersey, if they will begin on the work at once. Land drainage officers to the various Councils concerned are working on final details. Unemployed in this and other areas are eagerly awaiting developments, as the scheme will provide work for them for many years. Local authorities will also benefit in that valuable land will be reclaimed as the work proceeds.

Two Boys and a Buoy.

Two boys have had a remarkable experience in the Mersey, Crosby. One of the Mersey Docks and Harbour Board channel buoys, with 900-ft. of cable, was beached and anchored ready for transfer to the overhaul department. The youngsters, seeing the buoy, had the bright idea of using it as a bathing station and while they were inside, Dock Board workers in a boat took over the buoy and towed it up the river to the Herculean Dock. They were suddenly astonished to hear voices and, after looking round in vain, were amazed to find the youngsters inside.

Costly River Works Scheme.

Although it will be three or four years before the full scheme of providing a riverside promenade at Otterspool on the River Mersey is completed, good progress has been made with the work in the last twelve months. Work is now proceeding on the construction of the embankment to protect the river wall at its northern extremity. Starting at the south-west corner of Fulwood Park, the embankment is rather more than half completed. Ultimately it will join up with the river wall, which will enclose a promenade about a mile and a half long, with a width varying up to 400-ft. The embankment operations are being carried out by the Liverpool City Engineer's Department with direct labour, while the building of the river wall to the southward, as far as Beechwood Road, is being done by contract. On the two jobs some 300 men are employed. Some sixty acres of land are in course of reclamation, the material used being mainly debris from the new Mersey Tunnel. About 70,000 tons have been dumped on the site. For the facing of the embankment and the river wall, concrete blocks cast on the spot are being utilised. Although the northern embankment is officially described as temporary, in view of possible Dock Board developments further to the north, the concrete facing has been found to be necessary, because experience has shown that debris from the Tunnel is too friable to withstand river action. This friability is mainly attributed to the fact that the red sandstone has been extracted from the tunnel workings by means of explosives. The estimated cost of the engineering works now in hand will be approximately £190,000. This does not include the proposed extension of the river wall to the Garston Docks, plans and estimates for which are now under the consideration of the City Council.

Wyre Dock.

Work on the extension of the ice factory at Wyre Dock, Fleetwood, will commence shortly. The building will be extended on the west side of the existing works and will give further accommodation for storage purposes and the installation of new ice-making plant. The daily output of the factory at present is about 300 tons, and it is proposed to increase this by a further 150 tons. For each fishing trip, a trawler takes on board 10 to 30 tons of ice, varying according to the size of the vessel, the weather, and the expected duration of the voyage, and as much as 800 tons have been required on a busy day.

New Warrington River Wall.

Sanction has been received from the Government for the Warrington Corporation to proceed with the construction of the proposed river wall at Howley and the work has been started. About six months will be required to complete the scheme.

*Notes from the North—continued.***Ferry Works at Wallasey.**

Wallasey Corporation is tackling an extensive improvement scheme at Seacombe Ferry. The old hydraulic lifts which some time ago were replaced by the floating roadway, have been removed, together with the approach bridge, and the next piece of work to be undertaken will be the demolition of the clock tower. The tower, which contained the machinery which worked the hydraulic lifts for over half a century, has long been a familiar landmark from both sides of the river and it is no longer required. A new and imposing clock tower will be erected at the ferry approach. The ferry workshops will be removed to the other side of the motor park and floating roadway. The whole scheme, which also includes a new bridge for the use only of incoming passengers will, it is estimated, cost £105,000 and substantial contributions are to come from Exchequer funds. The receipts at the three Wallasey ferries during July showed a reduction of £4,362 compared with the corresponding month of last year, the drop being from £29,411 to £25,049. The expenditure for the month showed a decrease of £547 only.

Clarence Dock Power Station.

Liverpool's new riverside electric power station, which is being built on the site of Clarence Dock, will probably be put into service in the early New Year. The work now on the way to completion at Clarence Dock is the first instalment of a vast scheme which will cost several millions of pounds and make Liverpool the electrical metropolis of the North West of England. The outlay on the section in hand will amount to about £1,400,000. Boilers and turbines are already being installed and the whole site presents a scene of fascinating activity, with a forest of steel girders and giant cranes as a massively picturesque background. Cables will also be run through the Mersey Tunnel to supply Birkenhead, Wallasey and Wirral.

Royal Visitors to Liverpool Docks.

Prince and Princess Takamatsu of Japan were guests of the Mersey Docks and Harbour Board during their lightning tour of the Liverpool docks recently. They were received on board the Dock Board tender "Galatea," at the Landing Stage, by members of the Mersey Dock Board. At Gladstone Dock the vessel entered through the lock and basin, some time being spent on viewing the loading operations on one of the liners at the quayside. A short trip was made up the channel, during which the Royal party were entertained to lunch on board.

Dee Estuary.

It is many years since there has been such a sequence of shipping activity in the Dee Estuary waters, several new small craft having been recently delivered by the Dee shipyards. Mostyn Dock, which is one of the best natural harbours in the Estuary, recently accommodated a 1,200-ton ship. This harbour has a depth of over 15-ft.—and not on a spring tide either. With these hopeful signs for the future, the time

seems opportune for the Dee Conservancy Board to embark on their £150,000 navigation scheme for improving and making the estuary more navigable.

Fleetwood Rumours.

It is rumoured that the directors of the L.M. and S. Railway Company, the owners of the Fleetwood docks, have under consideration an extensive scheme of harbour extension. One possibility is the building of retaining walls in the river beyond the sandbank known as the Tiger's Tail, to enclose landing stages now very little used—the stretch and pocket below the big stage formerly used by the Belfast boats. It looks as if this can be done in such a way as to give additional berthing accommodation for the larger steam trawlers that are now being built and to attract general shipping of a class that does not now frequent Fleetwood. Fleetwood's chief hope must be that the State will take a hand as a means of promoting employment of labour and enable the railway company to face the cost. If the new harbour is constructed it will be a big step forward for the town.

One of the Wyre dock officials states that the railway company has in mind the needs of the fishing industry, and when these needs become more pronounced they will not be backward in meeting them. No confirmation is available of the suggested reconstruction scheme which is the subject of local gossip.

More about Dee Bridge Plan.

Mr. T. R. Wilton, a consulting engineer, has put forward plans for a £3,000,000 embankment and steel girder bridge across the Dee Estuary from Hoylake to the Point of Ayre. The bridge would provide a quick route from Liverpool and industrial Lancashire into North Wales. According to Mr. Wilton's proposal, the material on the spot would be the basis of this embankment. He would use what is called the hydraulic fill method such as American engineers use in the making of great dams. It consists of sucking up the sand through great pipes and pouring it between two containing walls of stone. This would prove a much cheaper method than that of transporting debris from under the Mersey across the Wirral Peninsular. Mr. F. Webster, lecturer in Civil Engineering at Liverpool University, states that the time may have come for such a scheme to be attempted. The bridge of Mr. Wilton's scheme is planned in 13 spans of 330-ft. each and the embankment gradually rises 80-ft. to meet it. The embankment carries a double railway track and a road side by side.

Coal Hoist Orders.

Following on their recent success in securing an order from the Great Western Railway Co. for two large movable coal hoists and traversers for Queen Alexandra Dock, Cardiff, the Hydraulic Engineering Co., Ltd., of Chester, have been again successful in obtaining another order from the same railway company for four fixed coal hoists for South Dock and Prince of Wales Dock, Swansea.

Scottish Harbour Notes.

Annual Inspection by Clyde Navigation Trust.

RECENTLY there was held the annual inspection carried out by the Clyde Navigation Trust, when a large company of members and guests sailed down the River Clyde on the steamer "Paladin." At the annual dinner in the evening, the toast of "The Clyde Navigation Trust" was eloquently proposed by Principal R. S. Rait (Glasgow University), who eulogised the great work that is carried on by this Trust, and a suitable reply was offered by Mr. James C. Craig, as Chairman of the Trustees. Other toasts included the "Corporation of Glasgow," submitted by Ex-Deacon Convener John Dallas, and acknowledged by the Lord Provost Thomas Kelly, and "Shipping, Ship-building and Commerce," proposed by Lieutenant-Colonel Sir Arthur Rose, with replies being offered by Sir William Raeburn, Bart., for shipping; Mr. Harold E. Yarrow, for ship-building; and Mr. John Craig, for commerce.

Satisfactory Financial Position of Clyde Navigation Trust.

In spite of the period of trade depression through which the country has passed during the past year, Mr. Alexander Kennedy (Convener of the Finance Committee of the Clyde Navigation Trust) was able to report at a recent meeting of the Trustees that the financial position of the Trust at the close of the year might be regarded as satisfactory. The revenue for the twelve months ended June 30th, he said, was

£1,012,784, while the expenditure amounted to £930,296. During the year the total net registered tonnage of vessels entering and leaving the port was 14,429,199, representing an increase of 636,193, while the total tonnage of goods imported and exported was 7,446,696, representing an increase of 485,820 tons. Mr. Kennedy also made mention of the very considerable sum of almost £100,000 which had been given during the past year in reductions of dues and charges by the new rates and de-rating relief. It was hoped that these reductions had been of considerable advantage to the trades which had benefitted, he added, and would be reflected in a still greater increase this year to the tonnage of vessels and goods using the port. He was hopeful that this would be so, as these reductions were only in operation for a part of last year and it was estimated that the total reduction would amount for the current year to £140,000.

Aberdeen Harbour Board and Revision of Rates.

At a recently held meeting of Aberdeen Harbour Board the Finance Committee recommended that a remit be made to a special committee to consider the present Rates and to prepare for the consideration of the Board a new and revised schedule of rates. The Finance Committee were of opinion, it was explained, that a special committee of a reasonable size and reporting directly to the Board would be able to carry out the proposed revision more efficiently and expeditiously than a sub-

Scottish Harbour Notes—continued.

committee. The report was adopted, and a special committee appointed with Sir John H. Irvin as convener. At the same meeting a letter from the Scottish Painters Society (Aberdeen Branch) on the necessity for providing work on account of the abnormal amount of unemployment was remitted to the Works Committee.

Portknockie Harbour Extension Grant.

Portknockie Town Council has decided not to accept an official invitation to apply for a harbour extension grant because it is not yet certain whether the extension will cost £26,000, £17,000 or £10,300. The Council formulated the £26,000 scheme first, but the Fishery Board engineer reported that the scheme could be modified to save £9,000. He also suggested an alternative scheme to cost £10,300, and the Fishery Board state that they are prepared to recommend this cheap scheme for Government assistance. "The £10,300 scheme merely permits of deepening the existing harbour by three feet and it does not go far enough," observed a leading Town Councillor, who felt that the original £26,000 scheme was the best. "In my opinion, a meeting with the Fishery Board engineer should be held to clear up the matter, and we shall appeal for a Government grant afterwards."

Reconstruction Works at Wick Harbour.

Authorisation was given at a recent meeting of Wick Harbour Trustees for the purchase of plant and material required in connection with reconstruction works, for which a grant had been sanctioned by the Treasury. Plans were exhibited of the first section of the proposed new wall at Harbour Quay, and in connection with the reconstruction works a letter was read from Mr. R. Gordon Nicol, consulting engineer for the Fishery Board. Mr. Nicol reported that the works sanctioned were (1) the reconditioning of the Harbour Quay; (2) the reconditioning of the North Pier Head; and (3) the widening of the North Pier. An important feature of works 1 and 2, wrote Mr. Nicol, was the speed at which they had to be executed. It was a special condition of the approval that the first portion of the Harbour Quay (162-ft. long) and the grouting of the super-structure of the North Pier Head must be completed before the end of March, 1931.

Ayr Town Council and Development of Harbour.

On the instruction of Ayr Town Council the Town Clerk has written to the London, Midland & Scottish Railway Company to enquire when the development of the local harbour is to take place. It was pointed out at a meeting that, by Section 27 of the Glasgow and South-Western Railway (Ayr Harbour Transfer) Order Confirmation Act, it is provided that the company "shall work and develop the harbour undertaking with proper energy and give all proper facilities and encouragement to the existing and future traffic at the harbour and they shall, after the date of vesting and not later than the expiry of ten years from the termination of the present war, expend upon the improvement and equipment of the harbour undertaking a sum of not less than £50,000." Locally there is a keen desire that the Ayr Harbour development should be proceeded with at the earliest possible moment, as it is felt that this would be a great asset to the town.

Dunbar Town Council and Upkeep of Harbour.

For some time past there has engaged the anxious attention of Dunbar Town Council the enormous breach in the East Pier caused by high seas, and the agitation continues for this matter being attended to. For years the revenue from local dues, etc., has been totally inadequate to meet the cost of upkeep, which has amounted to a large sum for a considerable time. The Unemployment Grants Committee are being approached to permit of this big scheme of restoration being proceeded with, together with repairs to the Victoria Harbour, and, in the event of this being successful, this will give employment to a large number of men.

Ross Harbour Inaccessibility.

In a recent issue of the *Ross-Shire Journal* an interesting editorial article appeared concerning local harbour facilities. "Our harbour facilities," it was commented, "are not freely available because the access to the deep-water pier is not strong enough to carry without risk vehicles of more than a ton weight. Five ton motor lorries are barred and shipments of agricultural produce are restricted to slow, lumbering carts, which, from more distant points, is not in these days an economic method of transport; otherwise the harbour is reasonable suitable. As to finance, either the Admiralty claim in respect of the pier erected mainly for Admiralty use should be wiped out or the older obligations to the Fishery Board and the Public Works Loan Commissioners should have been or should now be amortised. New money is needed, and to deny such small communities as Cromarty the petty sums required to help to retain and maintain an industrial community otherwise

threatened with gradual extinction is bad State policy. The total cost to the country would not involve more than £2,000 to £3,000 new money, which is less than the cost of settling three small landholders on uneconomic crofts."

Widening and Deepening of the Clyde.

Although it is not known yet how soon work will be commenced on the new Cunarder which Messrs. John Brown and Company are to build at Clydebank, the Clyde Trust announce that they have allocated the sum of £34,000 to widen and deepen the river at the lower reaches in order to allow the giant liner safe launching and passage down the river. There was a consultation between the Clyde Trustees and the ship-building firm before the contract was signed, and all the necessary channel facilities were promised by the river authorities, who are determined to do all in their power to ensure that the channel at Clydebank will be in suitable condition for the launch. It is understood that the sum allocated for the purpose is merely a preliminary expenditure for the year, and that the total cost of the necessary work will be at least double this amount.

Extension Scheme at Peterhead Commenced.

Messrs. John Angus & Sons (Edinburgh), who are the contractors for the extensive harbour improvement scheme at Peterhead, have now commenced operations thereon. This scheme, it is estimated, will involve a cost of £78,000, and it is hoped to provide work for nearly one hundred local unemployed men by the beginning of October. The scheme includes the deepening of part of the Henry Harbour, and, on the completion of the scheme, Peterhead will be in possession of one of the most up-to-date harbours in Scotland. Mr. Charles Poole is acting as resident engineer on behalf of Messrs. Angus in connection with the scheme.

Fraserburgh Harbour Inspected.

A visit of inspection to Fraserburgh Harbour was recently paid by the Earl of Shaftesbury and Sir Thomas Middleton on behalf of the Development Commissions, when they were shown over the harbour by Mr. Barr, C.E., and Mr. King (harbour superintendent). The visitors showed great interest in their work of inspection, and they were particularly impressed with the working of the boat slip-way. During the inspection they were joined by a number of the members of the local Town Council, and an interesting interchange of opinion between the civic authorities and the visitors took place.

A Good Morning's Work at Tilbury.

Five vessels, representing 50,000 gross register tons, to or from Buenos Aires, Bombay, Beira and Gothenburg, arrived at Tilbury Passenger Landing Stage on Thursday, September 11th, and were cleared within a few hours.

Nearly 700 passengers were embarked or disembarked and hundreds of bags of mail and baggage were dealt with.

A New Director for Vickers, Limited.

Vickers, Limited, announce that Colonel J. B. Neilson, C.M.G., D.S.O., C.A., has been appointed Director and Deputy-Chairman of the Company in place of the late Mr. G. G. Sim, C.S.I., C.I.E. We are informed that, although Colonel Neilson retains his appointment as Deputy-Chairman of Baldwins, Ltd., this does not imply there is any connection or working arrangement between the two companies.

Canal Bridges that will be affected by Development Scheme.

Bridges which for over a century have been picturesque landmarks on the Grand Union Canal between London and Birmingham will have to be reconstructed as the outcome of the £881,000 development scheme which the Company hopes shortly to undertake.

The general policy is to increase the capacity of the whole canal so that the passage of bigger craft may be possible. Its realisation will depend, in a large measure, on the reconstruction of the bridges as undertaken by the local authorities from time to time. In any new works of a permanent nature allowance will be made for a waterway to allow the passage of barges of 14-ft. 6-in. beam, but it is estimated that craft of 12-ft. 6-in. beam would serve meanwhile to navigate the River Thames and take in cargo from ship or dock, thus saving the cost of the transshipment from barge to narrow boats which is at present necessary.

The Company anticipates that craft will run in pairs as at present, namely, motor-propelled barge and towed barge of the following dimensions:—72-ft. long by 12-ft. 6-in. beam, which, when drawing 4-ft. of water will, it is estimated, carry 117 tons the pair, and when drawing 4-ft. 6-in. of water, 137 tons the pair.

The Humber Ports.

Humber Bridge and the Safety of Hull.

THE ambitious project of a road bridge across the Humber and the possible effects of the structure upon the navigable channel of the river and the access to the port of Hull continues to be the most debated subject in connection with the commercial affairs of the city. Sir Douglas Fox and Partners have prepared plans of a bridge to cost £1,750,000 approximately, and the Government has promised to contribute 75 per cent. of this sum subject to the local authorities on either bank of the Humber agreeing among themselves to subscribe the remainder. The Hull Corporation has promised £200,000, but there is by no means unanimity among other bodies, some of which have voted varying sums, while others, notably the East Riding County Council, have declined resolutely to give one penny towards the scheme for reasons of economy, etc. So far as the financial aspect of the project is concerned, the position, therefore, is one of great uncertainty, but it is conjectured, rather than let the scheme fall through, the Hull Corporation will be ready to shoulder increased liabilities and promote a Bill in which provisions might be inserted by Parliament fixing the contributions of the interested local authorities on a pro rata basis. As the time for giving notice of such a Bill is rapidly approaching, obviously there is not a day to be lost.

The most serious objection, however, comes from those who are charged with the care of the river and the keeping open of the ports where millions of capital are sunk in the docks and port facilities. In the early part of the month of September the Hull Chamber of Commerce and Shipping had the scheme under consideration, and after a full expression of opinion it was decided to refer the question to the Parliamentary Committee without a recommendation. Speeches in support were made by Mr. Edward Dumonlin, J.P., Mr. George Muff, M.P., Mr. C. P. Sherwood and Mr. Charles Wray, and emphasis was laid upon the benefits the trade of the port would derive from quicker means of communication between Hull and Birmingham and the Midlands generally. On the other hand, Mr. J. H. Fisher, J.P., chairman of the Humber Conservancy Commissioners, uttered a grave warning of the possible danger to the river and its navigable channel. Mr. Fisher prefaced his remarks by saying that the Conservancy Board had nothing to do with the economic aspect nor even the utility of the scheme, but were concerned solely with the navigational point of view. The Board naturally would have to obtain the best advice and place it before the tribunal that would have to decide whether the bridge should be built or not. What had struck him very strongly was that all accounts as to the need of the bridge stressed the development of the counties on either bank of the river and the convenience of the travelling public. He supposed everybody would like to have the bridge if it cost them nothing and did no harm. But he failed to find that any consideration had been given by any well-known authorities on tidal rivers—except the engineers who made the report—as to the effect the piers or buttresses would have upon the set of the tide either above or below the bridge. Mr. Fisher went on to say that he had been told by one good authority that although the space of the piers was only 5 per cent. of the total area, they must double that for the swirls and eddies which would take place; that would represent 10 per cent. of the whole. He asked whether the Hull Corporation had taken the opinion of any eminent engineer as to what might happen to the currents from the bridge to Hull. Was there any danger of those currents being so altered as to place the port of Hull in great danger? He had spoken to many high authorities on this subject, and not one said that he would pledge himself as to what might happen. Mr. Fisher concluded by saying that he was only expressing his own views on this grave subject, but he thought it would be wise for those who talked so glibly about the advantages of the proposed bridge to do a little hard thinking and try to realise what the dangers might be to the port of Hull.

Mr. George Muff, M.P., said that an expression of opinion from the chairman of the Humber Conservancy Board should at all times be taken into consideration, and he thought that the matters referred to by Mr. Fisher, especially the vital point as to the silting up and shifting currents, might be sent in the way of a watching brief for the Parliamentary Committee to consider. Mr. Muff stated that so far as tolls were concerned the Minister of Transport had expressed the view that for a limited number of years—he having in his mind ten as a reasonable number—tolls might be levied in order to pay back interest and sinking fund charges. In the course of the discussion the President (Mr. Hugh Stephenson) said that the terms offered by the Government were very favourable and probably would never again be available. The Government was prepared to spend money on works of national importance, and if it was

not spent on the Humber bridge it would in all probability go elsewhere. He thought that all were agreed, however, that the shipping of the port should not be endangered and that there should be no interference with the navigation of the river. Mr. Charles Wray said that he had heard a great deal about the supposed dangers of the scheme. On the other hand, an eminent firm of engineers had supported it, and he would be a very bold man who would say that they were wrong. Hull had suffered a good deal from the mistaken views of experts as to the Humber. When the riverside quay was built it was said that the Humber dock entrance would be silted up and the channel choked, but he had it on the highest authority that no money at all had been spent on dredging in consequence of the riverside quay. If it had not been for the experts Hull might have had a new landing stage and a new river line. In the end a resolution was adopted in the following terms:—“That the matter of the proposed Humber bridge be referred to the Parliamentary Committee, the Council being of the opinion that a bridge across the Humber would be an advantage to the trade and commerce of Hull, but the Parliamentary Committee must be satisfied that its construction would not interfere with the safety of the port.”

Filling-up the Old Queen's Dock, Hull.

A commencement has been made with the filling-up of the old Queen's Dock at Hull, recently acquired by the Hull Corporation for the purpose of street improvement and a central square or boulevard for the city. The dredging vessels employed in the river Humber are to be seen almost daily depositing the contents into the dock, which is now all but deserted except for some new steam fishing trawlers which are being fitted out. Advertisements have also been issued for tenders for a wooden bridge to span the dock at the south end.

Grain and Timber Ships at Hull.

The Hull docks are busy again with the import timber season in full swing and the arrival of numerous vessels with grain, etc. A feature is the preponderance of steamers laden with wood from the Russian Baltic and White Sea ports. At the beginning of September over one hundred had arrived this season from these sources, and there is every prospect that last season's total of 150 will be exceeded before the close of the year. Much of this Russian wood is being stored and is taxing the accommodation devoted to the timber trade to the utmost. Two cargoes of Russian wheat, besides numerous regular steamers from Leningrad with general cargo have recently come to hand at Hull. Although Hull stands well in the banks' clearing returns as having a smaller decrease than other cities when compared with a year ago, the volume of overseas trade is not up to that of a year ago. For the first eight months of the year imports of wheat and kindred cereals were 50,000 tons behind, and oilseeds, etc., 158,000 tons down. On the other hand, imports of wood hewn and sawn are about 40,000 tons advance. Exports of coal are below the level of a year ago and in the present state of foreign demand there seems little prospect of the lost ground being recovered. The fruit trade and fish landings show some expansion and there is greater activity in the shipbuilding industry, especially in the construction of steam fishing trawlers, several of which have been launched in the Humber district, as well as three or four cargo vessels, in recent weeks.

The Junior Institution of Engineers.

Col. Sir Henry George Lyons, F.R.S., D.Sc., F.Inst.P., F.R.A.S. (Director and Secretary of the Science Museum), has accepted the invitation of the Council of the Institution to become President in succession to Sir Ernest William Moir, Bart., M.Inst.C.E., and his induction will take place at a meeting to be held on the 12th December at the Royal Society of Arts, on which occasion he will deliver his address.

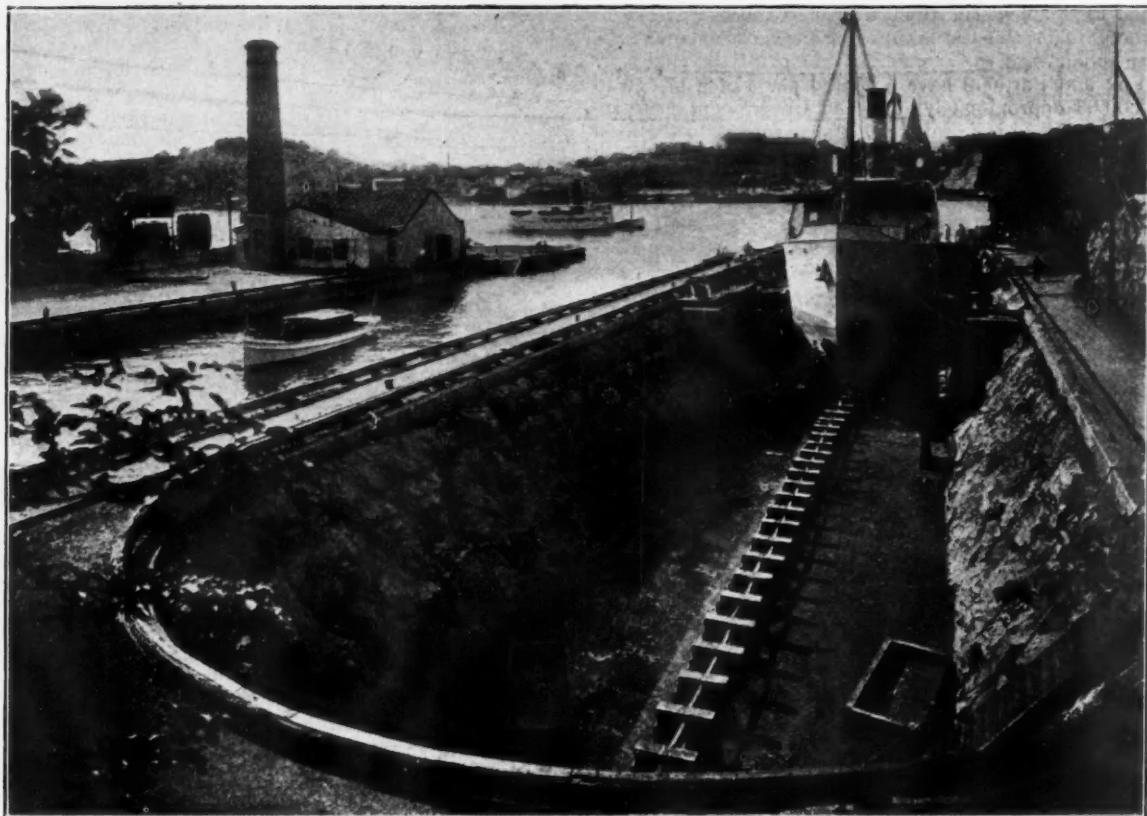
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Friday, 3rd October, at 39, Victoria Street, S.W.1, at 7.30 p.m.—opening meeting of the winter session—lecture, “The Development of the Bridge,” by S. J. Crispin (member). Slides.

Friday, 10th October, at 39, Victoria Street, S.W.1, at 7.30 p.m.—ordinary meeting—paper, “The Refining of Cane Sugar,” by S. Dunlop, F.C.I.P.A. (Chairman of the Institution). Slides.

Friday, 17th October, at 39, Victoria Street, S.W.1, at 7.30 p.m.—informal meeting—lecture, “The London Automatic Telephone System,” by T. H. Flowers (member). Slides.

Port of Stockholm.



The Two Older Docks on Beckholmen.



Skeppsbron and Kornhamnstorg Harbours, and the Lock at Karl Johans Torg.

The Port of Stockholm.

(Concluded from page 351).

Regular Shipping Lines from the Port.

Stockholm has regular connections with the following foreign ports: Amsterdam, Antwerpen, Bremen, Bordeaux, Danzig, Grangemouth, Hamburg, Helsingfors, Hull, Köpenhamn, La Pallice, Le Havre, Libau, Liverpool, London, Lübeck, Mariehamn, Memel, Oslo, Reval, Riga, Rotterdam, Rouen, Stettin, Abo, and ports of the Pyrenean Peninsula; with the Mediterranean and the coasts of North and South America, Africa and Australia.

Within the country Stockholm maintains communication by inland navigation with most of the places along the coast, on Lake Mälaren and its tributaries, and on Lakes Hjälmaren, Roxen, Vättern and Vänern.



Six-tons Level-luffing Pontoon Crane.

Harbour Traffic.

The number and tonnage of vessels which arrived at and departed from the port, the Free Port included, in 1927, 1928 and 1929, is shown by the following table:—

STEAM AND MOTOR VESSELS.						
	1927		1928		1929	
	Number	Net reg. tons	Number	Net reg. tons	Number	Net reg. tons
Arriving ...	40,956	4,058,215	40,162	4,136,704	38,837	4,302,684
Departing ...	41,007	4,064,393	40,223	4,131,330	38,918	4,318,955
SAILING VESSELS.						
	Number	Net reg. tons	Number	Net reg. tons	Number	Net reg. tons
Arriving ...	1,790	103,786	1,774	101,294	2,123	125,458
Departing ...	1,798	104,619	1,776	101,549	2,125	125,149
LIGHTERS.						
	Number	Net reg. tons	Number	Net reg. tons	Number	Net reg. tons
Arriving ...	8,161	520,814	8,776	547,828	11,981	789,071
Departing ...	8,162	521,327	8,789	550,458	11,911	790,060
Total Arriving ...	50,907	4,682,815	50,712	4,785,826	52,941	5,217,213
Total Departing ...	50,967	4,690,339	50,788	4,783,337	53,034	5,234,164
Aggregate ...	101,874	9,373,154	101,500	9,569,163	105,975	10,451,377

This table does not include vessels of less than 10 net register tons, or vessels moving about within the harbour area, or those merely passing through said area; nor tugboats and other vessels owned by the State or by the port authorities, etc.

The traffic in 1927, classified as to destination, may be seen from the following table:—

	Number	Net reg. tons
Transoceanic traffic ...	251	890,255
Other foreign traffic ...	5,468	3,445,887
Domestic traffic ...	96,155	5,037,012

The following table shows the foreign traffic, classified by countries:—

	Arriving from Number of vessels.	Net reg. tons.	Departing to Number of vessels.	Net reg. tons.
Finland ...	770	255,356	848	341,106
Russia, Esthonia, Latvia Lithuania ...	226	79,083	226	71,733
Germany, Poland and Danzig ...	795	468,672	750	452,441
Denmark ...	172	100,793	191	85,059
Norway ...	34	16,363	25	12,800
Holland, Belgium, France ...	300	364,893	349	436,889
Great Britain ...	266	395,960	218	304,862
Spain, Portugal and Mediterra- nean ports ...	54	64,764	63	73,478
America ...	105	315,515	95	267,755
Australia ...	26	144,171	25	145,465

In the years 1924-1927 the sea harbours and the harbours on Lake Mälaren shared the traffic as follows:—

	Sea Harbours Number	Net reg. tons	Harbours on Lake Mälaren Number	Net reg. tons
In 1924 ...	69,458	6,343,765	36,922	1,821,476
In 1925 ...	61,853	6,292,321	39,771	2,125,135
In 1926 ...	60,529	6,339,596	43,047	2,303,875
In 1927 ...	63,294	7,242,928	38,580	2,130,226

As no dues are levied on goods dispatched to places within the country, no statistics are available for that category. For this reason there are no figures for the total of goods received at and dispatched from the port.

The quantities of goods imported during recent years through the Customs Harbour and the Free Port of Stockholm are as follows:—

	From places within the country Tons.	From foreign places Tons.	Total Tons.
In 1913 ...	720,000	1,423,000	2,143,000
In 1919 ...	947,000	802,000	1,749,000
In 1920 ...	1,100,000	1,324,000	2,424,000
In 1921 ...	1,065,000	733,000	1,798,000
In 1922 ...	1,219,000	1,122,000	2,341,000
In 1923 ...	1,274,000	1,327,000	2,601,000
In 1924 ...	1,218,000	1,533,000	2,751,000
In 1925 ...	1,397,000	1,408,000	2,805,000
In 1926 ...	1,653,000	1,527,000	3,180,000
In 1927 ...	1,514,000	1,806,000	3,320,000
In 1928 ...	1,453,000	1,752,000	3,205,000
In 1929 ...	1,862,000	1,938,000	3,800,000

Exports to foreign ports in 1927 amounted to 340,000 tons, in 1928, 300,000 tons, and in 1929 to 462,000 tons.

The principal goods discharged at the port from foreign places and places within the country and those exported from the port are shown by the following tables:—

THE CUSTOMS HARBOUR

Class of Goods	From Swedish ports	From foreign ports	To foreign ports
Livestock ... (head)	38,144	8,158	270
Dairy products ... (tons)	18,600	3,060	141
Grain ...	52,000	87,800	3,500
Flour, grain, peas, bread etc. ...	36,600	8,500	3,500
Sugar and syrup ...	30,000	14,800	21
Fodder:			
Hay, straw, prepared feed, etc. ...	10,200	9,200	2,750
Fruit, seed, plants, berries, etc. ...	2,200	27,500	545
Spirits, beer, etc. ...	12,000	8,500	6
Yarn and textiles ...	6,600	11,200	1,000
Hides, bones, tallow, etc. ...	7,900	11,000	5,600
Oils ...	64,800	64,300	3,100
Firewood ... (cub. m)	167,766	33,496	—
Woodgoods ...	70,070	31,077	36,628
Boards and paper ... (tons)	23,900	5,600	5,900
Chemicals ...	5,000	10,300	1,600
Coal, charcoal, and coke ...	700	1,105,900	150
Asphalt and Cement ...	68,100	12,400	240
Clay, earth and mortar ...	18,300	12,200	5,000
Glass, porcelain, etc. ...	11,100	6,100	430
Bricks ... (nr.)	24,470,000	717,700	12,900
Ore ... (tons)	13,650	3,360	115,700
Iron and steel ...	47,500	92,200	58,600
Lead, copper and other metals ...	14,200	27,900	8,500
Machinery, tools, etc. ...	13,600	12,500	26,200

The Port of Stockholm—continued.

THE FREE PORT			
Class of Goods.	From Swedish ports	From foreign ports	To foreign ports
Coffee (tons)	—	20,100	1,440
Dairy products	—	2,300	70
Fish	—	1,950	—
Grain	—	14,580	—
Flour, grain bran, bread, etc. ..	—	1,700	140
Fodder:			
Prepared feed, etc.	—	3,300	—
Fruit, seed, plants, berries, etc. ..	—	9,300	300
Hides, bones, etc., and products thereof	—	2,200	90
Oils	—	2,800	90
Woodgoods (cub. m)	61	33	4,150
Woodpulp, dry (tons)	5,300	840	6,400
Coal and coke	1,500	60,200	—
Machinery, tools, etc.	590	7,900	2,300

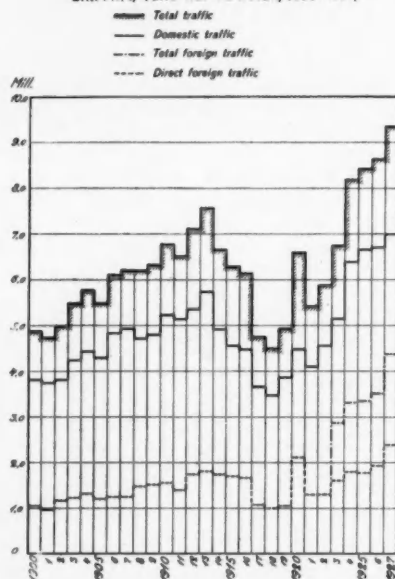
The total value of all imports and exports via Stockholm in late years, compared with the imports and exports for the whole of Sweden during the same period, is shown by the following figures:—

	IMPORTS.		EXPORTS.	
	to Stockholm million kr.	% of all Swedish imports.	from Stockholm million kr.	% of all Swedish exports.
In 1913	216.6	25.6	93.2	11.4
In 1919	623.5	23.6	146.6	9
In 1920	1,227.4	36.3	255.1	11
In 1921	393.4	30	139.5	12.2
In 1922	342.2	30.4	94.0	8
In 1923	384.1	29.5	106.1	9.2
In 1924	416.9	29	130.2	10.2
In 1925	447.1	31	158.3	11.6
In 1926	466.6	31	170.0	12

The development of the shipping in recent decades is shown by the diagram herewith.

THE PORT OF STOCKHOLM

SHIPPING, TONS NET REGISTER, 1900-1927.



Revenue.

The principal sources of revenue of the Customs Harbour during recent years have been:—

	1924	1925	1926	1927
Harbour dues on vessels	549,072	579,908	587,558	632,312
Harbour dues on goods	2,346,924	2,494,469	2,636,715	2,704,415
Track charges*	23,039	15,991	20,432	16,628
Total kronor	2,919,035	3,090,368	3,244,705	3,353,355
Charges for use of gangways, stocks, etc. ...	46,655	43,764	50,504	50,347
Charges for use of harbour cranes and capstans	327,771	313,270	376,772	444,302
Leases	692,995	683,627	694,804	739,006
Charges for temporary storage	169,311	127,102	133,863	136,479
Aggregate ...	4,155,767	4,258,131	4,500,648	4,723,489

The revenue of the Free Port during the same years has been:

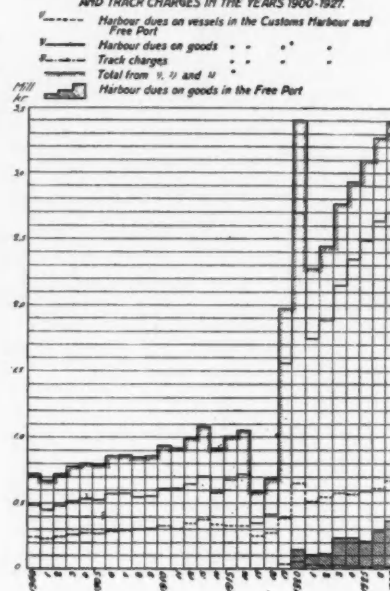
	1924	1925	1926	1927
Harbour dues on vessels	19,180	16,441	27,487	41,514
Harbour dues on goods	236,537	210,240	234,147	363,795
Dues on goods stored ...	352,897	302,295	323,991	379,033
Miscellaneous	346,351	237,751	270,879	286,368
Total kronor	955,065	766,727	906,504	1,075,760

* Charges for use of railway cars for goods neither discharged nor loaded over quay.

A diagram showing the revenue of the port in recent decades is given herewith.

THE PORT OF STOCKHOLM

INCOME FROM HARBOUR DUES ON VESSELS AND GOODS AND TRACK CHARGES IN THE YEARS 1900-1927.



Merchant Fleet of Stockholm.

The Stockholm shipping companies number 108. The merchant fleet, including steamers and motor vessels of 20 net register tons and over, comprised on January 1st, 1928, the following vessels:—

		Number	Gross Tons	Percentage of Total Swedish Tonnage	
				Number	Gross Tons
Steamers		279	256,367	24	24
Motor vessels		79	144,171	27	46
Total ...		358	400,538	25	29

The principal companies in Stockholm are: Stockholms Rederiaktiebolag Svea, Rederiaktiebolaget Nordstjernan, Trafikaktiebolaget Grängesberg—Oxelösund, Waxholms Nya Angfartygs Aktiebolag, Trafikaktiebolaget Mälaren—Hjälmarne, and Stockholms Transport och Bogseringsaktiebolag. Further information is given below under the heading "Development in recent decades of the port of Stockholm and its shipping."

Bunkers and Fresh Water.

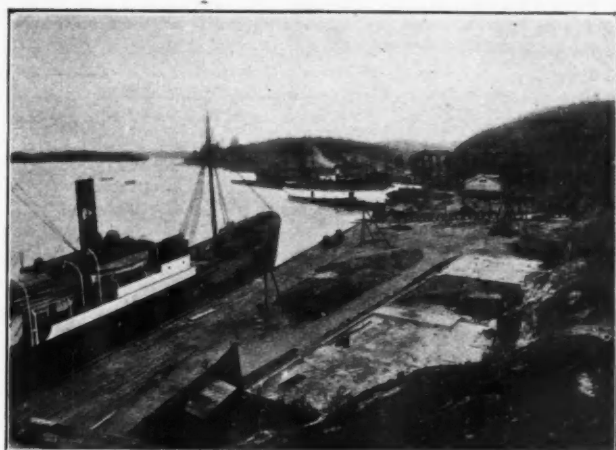
The bunkering facilities of the port are well ordered. A number of important coal firms, among them several of the leading concerns in the country, are established within the port, and all the year round supply coal of various qualities from their storage places at Värtahamnen, the Free Port, and Norra Hammarbyhamnen. All the storage places are of easy approach from the quays, and cranes and other transport facilities are available. Bunker coal is also supplied in lighters on the roads. There is likewise a good supply of combustible oils.

Fresh water from the city water works is obtainable from water hydrants on the quays, and on the roads from water launches belonging to private owners. The price for water from a hydrant is 20 öre a cubic metre, and from launch 2 to 2.50 kronor a cubic metre.

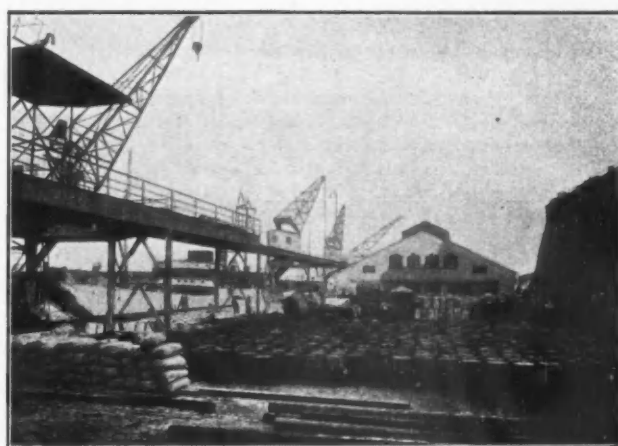
The Air Port.

The harbour area of Stockholm also includes the Air Port. This is a port for hydro-aeroplanes arranged on a small bay of Lilla Värtan called Lindarängsviken, just south of the Free Port, about 250 m. in width and with a depth exceeding 2 m. The Air Port has seven slips and one pier. On the plan in front of the bay is erected an entrance building with offices for Customs, passport police, etc., and a restaurant. There are also an administrative office building, a radio station, Customs pavilions, a building for oil distribution, a hangar, and other buildings. The port is well sheltered from all winds and has access through an outlet 73 metres wide to the large and unobstructed water of Lilla Värtan, which offers excellent starting and landing facilities. The Air Port is owned by the city and administered by a special Air Port Board with a chairman, chosen from amongst the burgher councillors by the City Board, and six other members, elected by the City Council. For budgetary purposes the Board is treated as a division of the Harbour Board. The Air Port Board is assisted by an Air Port manager for the conducting and supervision of the port and by

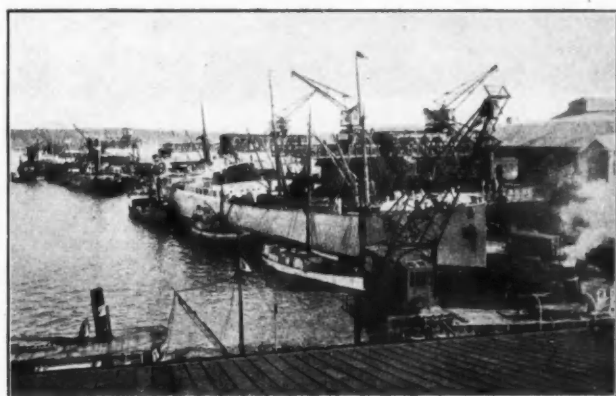
Port of Stockholm.



Finnboda Varv.



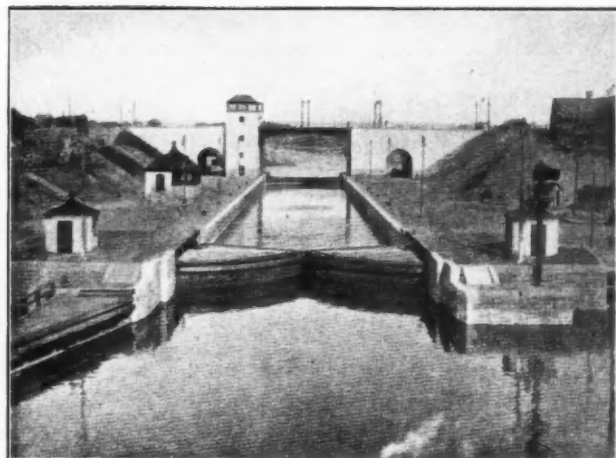
Stadsgardshamnen, East of the Great Customs Warehouse.



The Free Port: Northern Pier.



Hammarbyhamnen, seen from the West, with the Works of the General Motors Corporation.



Hammarbyslussen with Skansbro.



Nybroviken and Strandvagen, with Djurgardsbrunnsviken in the background.



Stadsgardshamnen and the Great Customs Warehouse.



Inner Waters of Lake Malaren and the Sea, with the Airship "Italia."

The Port of Stockholm—continued.

the Harbour Board, as far as the technical and financial administration is concerned. Certain dues are levied by the city on aeroplanes landing in the Air Port according to a tariff fixed by the City Council and confirmed by the Government.

During the warm season the Air Port has regular connections every working day with Abo and Helsingfors through the agency of the Swedish Aktiebolaget Aerotransport and the Finska Aero O—Y at Helsingfors and thrice a week via Kalmar with Danzig, Stettin, and Travemünde through the agency of Deutsche Luft-Hansa A.-G., Berlin. In 1927 the aeroplanes arriving at the port numbered 805, carrying 3,321 passengers, 17,192 kg. goods, and 2,448 kg. mail. In the same year 806 aeroplanes departed carrying 3,244 passengers, 25,556 kg. goods, and 7,456 kg. mail.



Five-tons Level-luffing Jib Crane at the Warehouse Building in the Inner Part of Stadsgardshamnen.

Fire Appliances in the Port.

In case of fire in the port two fire floats of the Stockholm fire brigade are available. One, the Phoenix, is stationed on the sea at the National Museum and has an engine power of some 280 h.p. and two fire engines with an aggregate capacity of 8,000 litres a minute. The second one, the St. Erik, is stationed on Lake Mälaren beneath the City Hall and has an engine power of 75 I.H.P. and a fire engine with a capacity of 6,000 litres a minute. Both steamers are equipped with proper supplies for fire extinction as well as 1,200 metres of hose.

Development in recent Decades of the Port of Stockholm and its Shipping.

As already mentioned, the development of the port into a modern port of importance has taken place mainly in recent decades, in regard to the harbour works and the equipment thereof as well as the traffic.

While at the beginning of the present century the length of quays of the port was about 10,500 m. with a greatest depth of about 7 m., the port has now a quayage of nearly 20,000 m. with a depth approaching 10 m. In 1900 the custom house buildings and warehouses covered a total area of 7,365 square metres with an aggregate floor space of about 14,900 square metres, while the present corresponding figures are 22,250 and about 84,000 square metres respectively. Practically the whole crane equipment of the port has been installed in the last 30 years. In 1897 the port had not a single engine-driven crane. At present the city owns 101 cranes, more than half of them having been constructed since 1920 and representing the most modern and appropriate design.* Since the beginning of the century an amount of 86 million kronor has been spent on new buildings and equipment, about 70 million kronor of which during the last ten years alone.

The harbour traffic has increased considerably. In 1900 the net tonnage of vessels arriving at and sailing from the port for which dues were paid was only 4,878,095 tons, against 6,373,145 tons in 1927. In the same period the quantity of goods imported through the port has risen from 1,253,800 tons to 3,320,000 tons, while the harbour revenue has increased from about 827,700 kronor to about 5,800,000 kronor. It is further worth mentioning that previous to 1919 the port was not accessible for vessels drawing more than 7.2 metres, owing to the insufficient depth of Oxidjupet, while to-day vessels are admitted with a draught of 10 m. The year preceding the great war only two vessels of more than 4,000 net register tons called at the port, the biggest one measuring 5,775 tons. In 1926 the number of vessels of more than 4,000 net register tons

calling at the port was 33, and in 1927, 35 ranging from 4,000 to 16,000 tons. July and August, 1927, were the first months, when the total tonnage of vessels arriving at, departing from, or passing the port of Stockholm exceeded 1 million.

A further illustration of the growth of the traffic in the port of Stockholm is given by the following particulars concerning more important owners of vessels using the port.

Stockholms Rederiaktiebolag Svea, which has its seat in Stockholm, was formed in 1871 with a capital of 2 million kronor and started operations the following year with two sailing vessels and two steam schooners. The company has to-day a capital of 29.4 million kronor and a merchant fleet of 95 vessels with an aggregate tonnage of 116,960 tons d.w. and an estimated value of 42,838,020 kronor. The company maintains communications with practically all Swedish coastal towns as well as with ports in Finland, Russia, the border countries, Denmark, Germany, Holland, Belgium, England, and France, and its tramps touch at places all over the world.

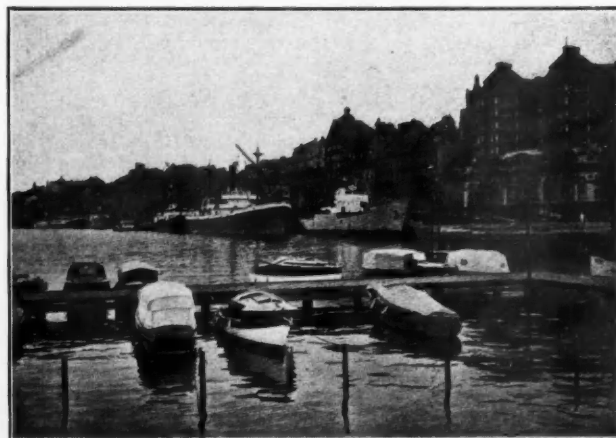
Rederiaktiebolaget Nordstjernan (Johnsonlinjen), which also has its seat in Stockholm, was formed in 1890 and started with three steamers for freight traffic with British ports. In 1904 the company opened the direct Swedish route to the Argentine and Brazil. It is now running 15 motor vessels with a total tonnage of 108,600 tons d.w. for freight and passenger traffic with South American ports and ports on the west coast of Central and North America. The capital of the company amounts to 7 million kronor.

On account of the considerably increased export of goods from the United States to Stockholm since the war, A.-B. Svenska Amerika Mexiko Linien found it possible in 1919, in co-operation with Rederiaktiebolaget Transatlantic and later with A.B. Svenska Amerika Linien, all with head offices at Göteborg, to start regular calls at Stockholm. In 1925 a direct route was opened between New York and Stockholm without intermediate calls at Swedish harbours. The company's vessels at present arrive at or depart from the port some 40 times a year.

Rederiaktiebolaget Svenska Lloyd of Göteborg has about 20 vessels totalling 50-60,000 tons d.w. on regular routes between Stockholm and Portugal, Spain, Southern France, Italy, the Adriatic Sea, Tunis, Algeria, Morocco, and the Canary Islands. On these lines Stockholm has 3 to 4 sailings a month.

Waxholms Angfartygs Aktiebolag was formed in Stockholm in 1869 with a capital of 30,000 kronor. It owned at that time two vessels. The present capital amounts to 1,220,300 kronor, and the company has now a fleet of 31 steamers and 8 steam launches. During the summer months the vessels of the company make about 55 sailings a day to and from Stockholm, apart from short trips between landing stages in the archipelago, and in 1927 they covered a distance of 973,500 km., or more than 24 times round the world.

Trafikaktiebolaget Mälaren-Hjälaren of Stockholm has developed from the Fittja Angslupsbolag, which was formed in 1863 and only owned one steam launch. The company, the present name of which dates from 1925, has a capital of 744,500 kronor and owns 34 steamers, 3 tugboats, 9 motor vessels, and 22 lighters, in traffic on Lakes Mälaren and Hjälaren. In summer 38 trips daily are made to and from Stockholm.



Stadsgardshamnen, seen from the West. A Motor Boat Harbour in the foreground. The Harbour Board has its Premises in the last Building to the right.

Stockholms Transport och Bogserings Aktiebolag of Stockholm was started in 1867 and was organised in 1870 as a shipping company. At first the company owned one steamer and 11 lighters, while to-day it possesses a fleet of 38 tugboats, including 16 ice-breakers, and 207 lighters. The capital of the company amounts to 1,500,000 kronor. Its towage activities are not confined to Stockholm, but extend to the Baltic and the North Sea.

* In addition 5 cranes have been ordered.

Port of Stockholm.



Stadsgårdshamnen and "Strommen."

The Port of Stockholm—continued.

Finally, it ought to be mentioned that in 1900 the number of shipping companies in Stockholm was 62, that the engine-driven vessels numbered 167, with a total tonnage of 66,170 net register tons, while in the beginning of 1928 the number of shipping companies had risen to 108, and the number of engine-driven vessels to 358, totalling about 279,000 net register tons.

Budget of the Stockholm Harbour Board.

The scope of the financial activities of the Stockholm Harbour Board is clearly illustrated by its budget, the main items of which are given below:—

Abstract of the Budget of the Harbour Board for 1929.		
1. The Customs Harbour with buildings and constructions.		
	Revenue	Expenses
A. General Manager, etc. ...		74,865
B. Audit Department ...		485,000
C. Harbour Building Department ...	1,080	303,190
D. Harbour Office ...		186,025
E. Harbour Administration and maintenance ...	4,941,000	2,797,640
F. Harbour Extensions ...		1,737,000
Total ...	4,942,080	5,583,710

2. The Free Port ...	888,150	2,709,500
3. Other Buildings and Constructions administered by the Harbour Board.		
A. Locks		
1. Lock at Karl Johans Torg	90,500	140,450
2. Hammarby Lock ...	30,000	72,200
B. Canals		
1. Hammarbyleden ...		69,700
2. Other Canals ...	1,000	7,100
C. Water & Bridge Constructions		2,399,700
D. Customs Houses ...	100,000	1,063,300
E. Harbour Works outside the harbour area ...	2,000	110,000
F. The Air Port at Lindarängen	22,550	45,200
Total ...	246,050	3,907,650
Summary.		
1. The Customs Harbour with buildings and constructions	4,942,080	5,583,710
2. The Free Port ...	881,150	2,709,500
3. Other Buildings and Constructions administered by the Harbour Board ...	246,050	3,907,650
Grand Total ...	6,076,280	12,200,860

Legal Notes : Dock Authority and Income Tax.

THE question which the First Division of the Court of Session had before them in *Commissioners of Inland Revenue v. Forth Conservancy Board*, 1930, S.L.T. 537, was whether the surplus revenues of the appellant Board were profits or gains within the meaning of the Income Tax Act, 1918, Case VI. of Schedule D, and assessable to income tax under that case.

The Income Tax Act, 1918, enacts under the head of Schedule D:—

1. Tax under this schedule shall be charged in respect of:
 - (b) All interest of money, annuities, and other annual profits or gains not charged under Schedule A, B, C or E, and not specially exempted from tax;
2. Tax under this Schedule shall be charged under the following cases respectively: that is to say:

Case VI.—Tax in respect of any annual profits or gains not falling under any of the foregoing cases, and not charged by virtue of any other Schedule.

It was held that the surplus revenue was subject to taxation. The decision was based on grounds of general interest, the principal of which we will briefly notice.

When any body of men, whether a corporation or not and whether constituted by statute or not, carry on an enterprise, or, to use the latest expression, an "activity" and, the receipts in the year are greater than the expenditure, the surplus is *prima facie* profits and assessable to income tax. It has always, however, been recognised that this does not apply to the ordinary public rating authorities such as town councils and county councils. Any surplus which their accounts may show at the expiry of the year is not always to income tax. Two suggestions at least have been made as to why this is so. One suggestion is that the inhabitants of the area of the rating authority are a community like a club, that any surplus is not a profit but a pool into which is collected their own money, which has already borne income tax. Another suggestion is that the authority is entitled to rate in each year only for the expenditure of the year, and that any surplus must be regarded as inadvertent and accidental. Neither explanation seems quite satisfactory or to cover every case. But, however this may be, it is recognised that a surplus in any year in the hands of such an authority is not profits liable to assessment in income tax.

Now, if there were any authoritative decision by which it had been found that, for reasons stated and explained, the surplus income of such rating authorities was not profits liable to taxation as such, it would be necessary to determine whether such considerations applied to the surplus income in question. There is no such case. "It has always been a matter of understanding that local public bodies levying rates are not amenable to assessment for income tax owing to a surplus of the return from rates in any year over the outgoings of the year. This exemption has been judicially recognised as beyond question. It is not of the nature of a positive law so fixed as to be independent of reasons."

The Forth Conservancy Board represented the commercial interests of the Forth, but the services they render to navigation and commerce are by no means confined to their own constituents or to the area of their immediate jurisdiction. Moreover, the revenue they collect is raised, not from any body of

ratepayers within the jurisdiction, but by dues, rates, and charges exacted from all and sundry who use the navigation conserved by them. It is not therefore possible to regard the respondents as in the same position as a local administrative body (like a county council or a town council) serving the interests of their own constituents within their own area by means of the proceeds of local rates. To such bodies and to their revenues the principles of domesticity and mutuality—which are most evident in the cases of corporations, clubs, and mutual insurance companies—apply. The revenue of the county or town council is the collective revenue of its own respective constituents, and a surplus of annual revenue from rates over annual expenditure remaining in their own hands is no more an annual profit or gain than the surplus of the householder's allowance to his housekeeper in any year over the cost incurred by the latter in running the household in that year.

The Court were of opinion that the fact that the Forth Conservancy Board had a monopoly created by statute in their favour was no reason for excluding from taxation income, otherwise taxable. On the other hand, they are deriving a surplus of revenue over expenditure from the provision of a public utility in respect of which they were entitled to charge all those who avail themselves of it with certain dues. They were not a department of Government in any sense, notwithstanding that their powers were derived from Parliament. Accordingly the conclusion was reached that it was enough to make them liable to assessment to income tax under paragraph 1 (b) of Schedule D that their profits or gains were derived from the exercise of a statutory power to charge rates, dues and charges against all and sundry who availed themselves of the public utility which it was the business of the Board to provide for all those who desired to avail themselves of it.

Conference on Steel Structures Research.

A conference on steel structures research will be held in the Lecture Theatre of the Institution of Civil Engineers at 11 a.m. on the 16th October, 1930.

The purpose of the conference is to promote discussion of the work and objects of the Steel Structures Research Committee of the Department of Scientific and Industrial Research. This Committee has been set up to review existing regulations for the use of structural steel in buildings and bridges, and to investigate the possibilities of more efficient and economical design. In order to ensure the effective application of the results of the Committee's work, it is felt to be desirable at an early stage to enlist the interest and co-operation of various bodies concerned. The conference will, therefore, provide an opportunity for an exchange of views and for a consideration of various suggestions that have been made, in particular the feasibility of formulating a standard practice in the use of structural steel in building throughout the United Kingdom. Invitations have been addressed to Local Authorities, professional and technical organisations concerned. Any bodies who have not received invitations and who would wish to be represented at the conference are requested to communicate with the Secretary, Department of Scientific and Industrial Research, 16, Old Queen Street, Westminster, S.W.1.

Italian Harbour Affairs.

STATISTICS concerning shipping at various Italian ports during the month of July have been published, but they do not show any alteration in respect to the month of June as a whole, also because of the seasonal depression of trade. Much, as has previously been stated, of the future prospects of shipping at Italian ports depends upon the economic situation of the country. In this regard it ought to be noted that, although Italy has not escaped from the world-wide depression, yet the fact that the Fascisti Government has voted credits for over 300 million lire for extensive public works to be carried on through the winter, and thus employ labour which would remain idle from the inactivity of certain industries, will undoubtedly influence the purchasing power of the country and consequently facilitate trade, also because the consumer will not cut down purchases and, therefore, demand will encourage the producers.

It may, however, be interesting to examine the position of trade at certain ports. At Genoa shipping during July has shown the following developments:—

Flag	No.	ARRIVALS		No.	CLEARANCES		No.	TOTAL	
		N.R.T.	Tons (Goods)		N.R.T.	Tons (Goods)		N.R.T.	Tons (Goods)
Italian	293	477,096	242,781	296	440,390	33,788	589	917,486	276,569
British	36	94,083	114,691	35	91,180	1,613	71	185,213	116,304
Spanish	13	32,806	55,647	11	30,360	3,303	24	68,166	58,950
French	7	26,642	1,649	7	26,443	717	14	53,085	2,366
German	21	69,894	13,541	21	64,815	2,573	42	134,709	16,114
Greek	12	28,657	55,039	9	21,316	2,046	21	49,973	57,095
Dutch	20	81,948	9,616	21	86,364	4,461	41	168,312	14,077
American	6	29,726	4,395	6	28,723	1,939	12	58,449	6,334
Norwegian	10	14,926	6,719	9	11,825	645	19	26,751	7,364
Danish	4	7,382	2,897	3	6,389	452	7	13,771	3,349
Swedish	5	8,358	3,739	6	8,836	149	11	17,194	3,888
Belgian	4	9,223	15,869	3	6,614	—	7	15,837	15,869
Japanese	1	4,384	385	1	4,384	275	2	8,768	660
Jugoslav	5	11,598	27,352	3	7,349	—	8	18,947	27,352
Finnish	1	1,233	1,050	1	1,233	—	2	2,406	1,050
Other Flags	3	4,752	9,289	2	3,107	150	5	7,859	9,439
Total	441	902,658	564,659	434	839,328	52,111	875	1,741,986	616,770

Shipping has thus shown an improvement, as the volume of goods unloaded and loaded has reached about 620,000 tons, against 556,923 tons in June and 574,744 tons in May, and should this progress continue it may be expected that the final figures for 1930 might show an improvement over 1929. The influence of the cereals trade on Genoese shipping has often been referred to, and although the imports of cereals during July have shown a decrease, trade has shown an increase owing to a progress in the imports of coal, cotton and general merchandise.

In connection with shipping at Genoa, small boats fitted with mechanical loading facilities have been inaugurated for bunkering purposes at that harbour and charges have been cut down by 10 per cent.

In the course of the last meeting of the Executive Committee of the Consorzio Autonomo del Porto it was decided to undertake the construction of small conveyor cars on the San Giorgio jetty, and steps have been taken to facilitate the direct unloading from ships on the Calata San Lazzarino, where the foreign transit trade has been concentrated.

Where things do not appear to have improved is at Naples, since the volume of goods unloaded during the month of July, 1930, reached 141,000 tons, against 188,000 tons during June and 148,000 during May of this year, and the same thing might be said about exports, which have remained stationary at 17,000 tons.

At Venice the situation has not improved and a slight decrease is shown by the following figures:—

	Unloading	Loading	Total
July 1930 (Tons)	270,331	27,973	298,304
July 1929 (Tons)	294,673	36,344	331,017
	24,342	8,371	32,713

Only the imports of phosphates and oil have increased, while other items have shown a decrease. Yet a point of special importance is the development of the cotton trade, as during the first two quarters of 1930 about 31,000 tons of cotton have been imported in the above mentioned Adriatic port. About 14,000 tons arrived from the United States of America, 9,000 tons from British India, 7,000 tons from Egypt, etc., showing a noteworthy increase in respect to the corresponding period of 1929.

In connection with the improvement of unloading facilities in the port of Venice two new electric cranes of 4.5 tons, particularly built for the coal trade, have been fitted on the coal trade

jetty, while two additional cranes are under construction and will shortly be placed into operation.

With the development of the Italian steamship services to British Indian and Far Eastern ports with ships of 18 knots speed the question has again arisen of exploiting the maritime passenger station at Brindisi, which used to be used by the P. and O. Steamship Co. when, before the war, it used to operate a regular service from that port to handle the Indian mail. The Lloyd Triestino has taken up the maritime passenger station, while efforts have been made to increase connections from Brindisi with the Near East; and while a regular air line exists from Brindisi to Istamboul via Pireaus, an air line was commenced some weeks ago from Brindisi to Rhodes, and another one will be inaugurated from Brindisi to Rome, so as to connect Western Italy to the East.

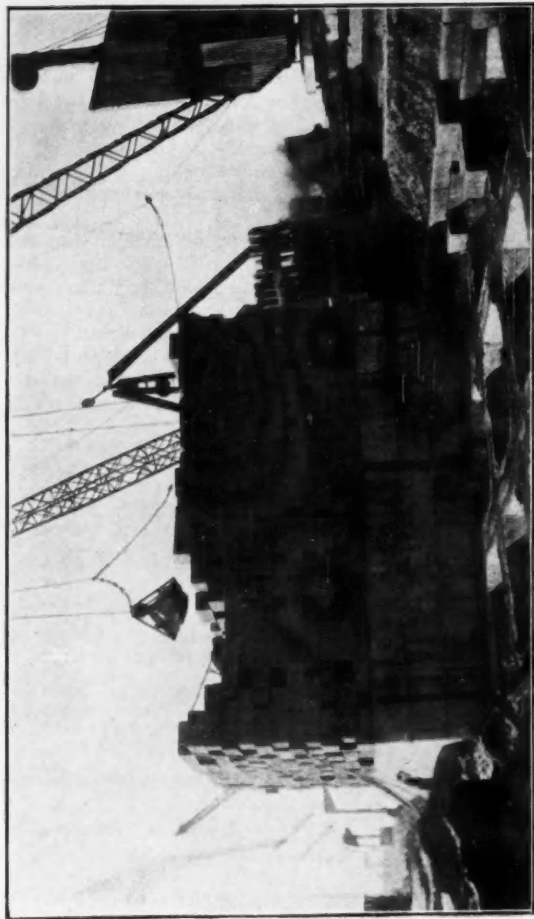
The Chamber of Commerce and Industry at Brindisi (Consiglio Provinciale dell'Economia) has prepared a report on the development of shipping at that port. From this report it appears that 1,051 ships, representing 2,936,484 net register

tons, arrived at Brindisi during the period from January to March, 1930, against 1,047 ships and 1,790,400 n.r.t. during the corresponding period of 1929, showing an increase of 13.18 per cent. in the net register tonnage, which means that a larger number of ships have called there than in the past, and this is due particularly to the increased activity of Italian lines. This statement appears to be confirmed when it is taken into consideration that during the period from January to March, 1930, 14,582 passengers arrived and 16,613 cleared from that port, against 13,312 arrived and 15,882 cleared from Brindisi during the corresponding period of 1929, thus showing an increase of 6.62 per cent., while the goods traffic has shown an increase of 10.62 per cent.

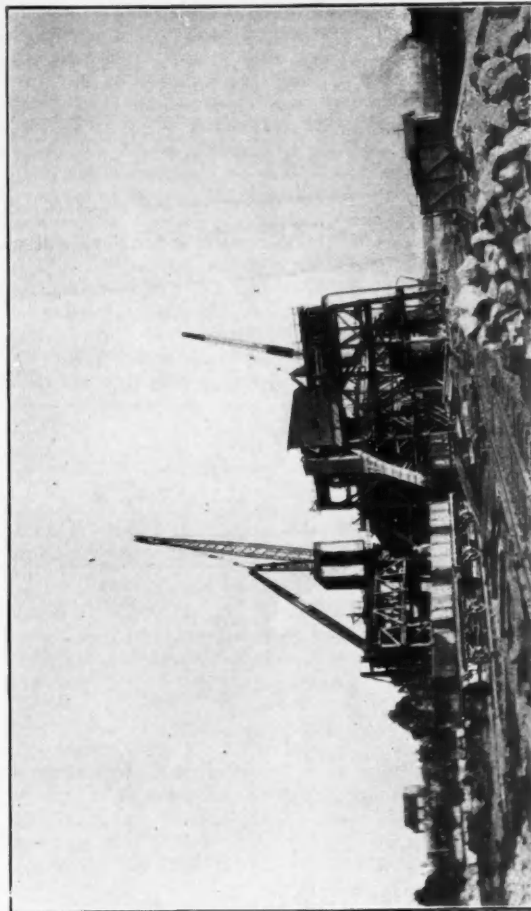
In connection with the question of transit trade through Italian ports, it is officially confirmed that the Italian Ministry for Agriculture has authorised the transit of oranges and lemons from Palestine, and the transit of any fruit from South Africa through the ports of Trieste and Fiume during the whole 12 months of the year, provided that the receivers can exhibit a certificate from the authorities of the port of shipment in regard to the sound condition of such fruit and that the same are shipped at once from the port of transit by rail on the markets of the hinterland. It is understood that such decision has considerably influenced the development of shipping between Italy and South Africa.

In connection with the development of Italian ports, it should be noted that in the course of the past few years much support has been given to the creation of new harbours in small centres where industries are growing larger from day to day, as is the case at Crotone (formerly Cotrone), where the Montecatini Chemical Products Factory is erecting a new fertiliser factory and where the Sila-Savelli Lumber Company intends to commence exporting pine from Calabria woods, the exploitation of which has been started with the object of rendering Italy independent of the imports of lumber from foreign markets, as is now the case for Pescara, in the neighbourhood of which there are several factories, such as those of the Aziende Chimiche Nazionali Associate, the Società Industrie Minerarie ed Elettrochimiche, and the Società Abruzzese Miniere di Asfalto. It is a fact that shipping at Pescara has considerably increased in the course of the past few years, and that goods unloaded and loaded in 1929 reached 65,000 tons, against 23,000 tons in 1927, and if this increase continues there is no doubt that in a few years Pescara might compete with larger Adriatic ports. In the meantime the Government has taken steps to start the construction of a new pier and large dredging works at Pescara.

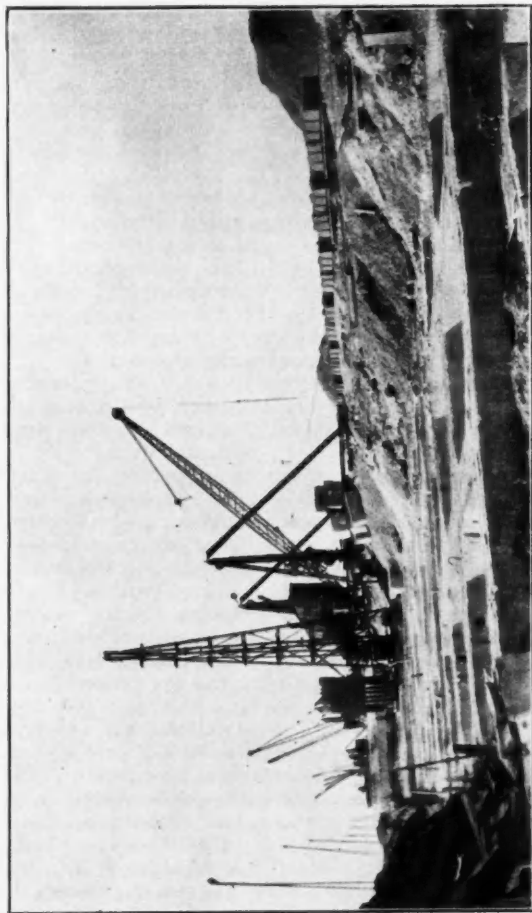
Southampton Docks Extension.



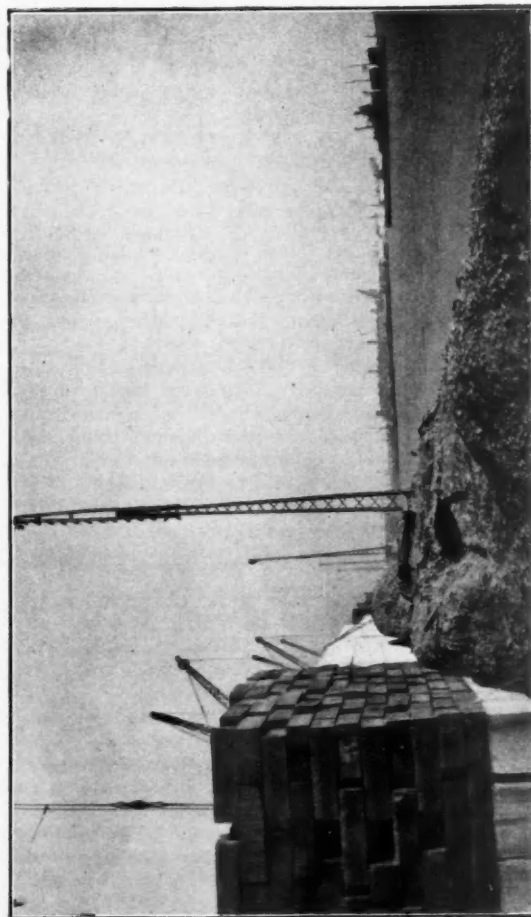
One of the 7,000-tons Concrete Monoliths being sunk by the weight of scores of Iron Blocks, each weighing three or four tons.



The Concrete Mixer preparing the Concrete for the Giant Monoliths.



Several Monoliths which have been sunk to their final depth in the bed of the River Test.



Part of the New Extension at Southampton and the Old Docks in the distance.

The New Docks Extension Scheme at Southampton.

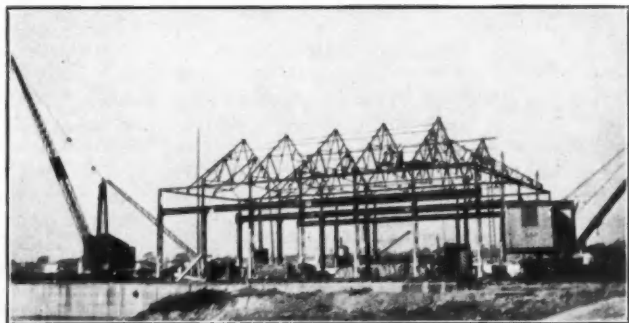
First 1,000-ft. Berth will be Ready for Shipping in the Early Part of 1931.



A Panoramic View of the Docks Extension at Southampton. On extreme right is Steel Superstructure of the New Pumping Station and Electricity Sub-station, the first Permanent Building to be begun in connection with the scheme. The finished Quay Wall is immediately in front of it.

WORK on the Docks Extension Scheme on the Western Shore, Southampton, which the Southern Railway are carrying out at a cost of £13,000,000, is making such good progress that the first 1,000 feet berth to be provided by the scheme will be ready for the reception of shipping by the early part of 1931.

The half-way mark has been reached in the construction of the concrete monoliths, which will form the new deep water quay wall. At the present time forty of the seventy-eight 7,000 tons monoliths, which will form the 3,800 feet of new dock wall to be furnished under the first section of the scheme, have been sunk to their final depth in the bed of the River Test. The other monoliths have not yet reached the required depth, for the process of forcing them down by means of enormous weights of iron blocks and grabbing material from under them by means of the wells which run right through the concrete is one that cannot be hurried. Variations in the sub-soil result in the monoliths sinking at varying rates, and those upon which work is still being carried out to sink them to the required depth are not at uniform levels.



The Steel Skeleton of the New Pumping Station and Electricity Sub-station, the first Permanent Building to be erected.

Of the forty monoliths which are down to the proper level, twenty-three of them have already had the bottoms of their nine wells sealed. This has been done by filling them to a depth of about fifteen feet from the cutting edge with concrete. The monoliths are now more or less ready to be covered by the concrete deck which will constitute the finished quay, where will be placed the quay cranes and permanent way.

The fact that the work of sinking the monoliths has reached such a stage is an achievement upon which the contractors, Sir Robert McAlpine & Sons, Ltd., are to be heartily congratulated. Although the work has been of considerable difficulty,

there have been no hold-ups to delay the date of the completion of the scheme.

The first permanent structure to be erected under the extension scheme is now being built. It is the combined pumping station and electricity sub-station. The steel skeleton of this building is nearly completed, and when the whole building is finished it will enable important work to be carried out within its walls. The pumping station will deal with storm water drainage. The portion of quay wall upon which this building is being erected has been cleared of the gravel and brushwood fascines through which the monoliths forming the wall were sunk, and it is thus possible to see practically a hundred yards of the new quay wall in its finished state.

The next part of the work to be begun is the reclamation of 170 acres of river bed enclosed by the new wall and banks. The sluice gates at the western end of the area to be reclaimed have been completed and are ready for dropping. The area of 170 acres, which at high water is covered by the tide and at low water is mainly exposed as mud, has to be filled in. This work will be undertaken by the James Dredging, Towage & Transport Company, Ltd., who have had built a super pump for pumping into the area material dredged from outside. It is, in fact, the largest reclamation plant ever built, and it will be capable of depositing an average of 50,000 tons of spoil a week.

It is estimated that about 3,500,000 tons of dredged material will be required to convert this area of river bed into solid land, so that it is obvious the completion of the reclamation will take a considerable time. When all is in readiness for the reclamation to be commenced the firm's dredgers will proceed with the work of dredging the new approach channel, which will have a depth of 35 feet L.W.O.S.T., and afterwards the new berths which will have a depth of 45 feet L.W.O.S.T. After the surface mud has been lifted from the river bed and conveyed to sea in hoppers, the more solid material underneath will be deposited by the dredgers into solid bottom barges. These barges will be towed alongside the reclamation pump and the spoil will be pumped from the barges through long pipe lines and discharged into the "pond" or area of mudland enclosed between the reclamation banks and the existing foreshore. The first portion of the reclamation to be undertaken will be of the area at the end of the quay wall, nearest the Royal Pier, for it is there that the first 1,000 feet berth will become available for shipping next year.

Culverts, each seven feet in diameter, are being laid for supplying and discharging condensing water to the Southampton Corporation Electricity Works and sea water to the Corporation Baths situated near the extension and for dealing with storm water drainage along the foreshore. This part of the work is practically completed.

Canadian Notes.

St. Lawrence Power Development.

Construction is about to be begun on the large power house of the Beauharnois Power Corporation, about 20 miles above Montreal on the St. Lawrence River, and orders are being placed for about 11,000 tons of structural steel for use in this portion of the great undertaking. According to the announcement made by the Beauharnois Power Corporation, the Dominion Bridge Company will supply 2,100 tons of structural steel for the power house; 1,250 tons for the trash racks and their frames; two 200-ton power house cranes; and two 150-ton gantry cranes for the power house bulkhead. To Canadian Vickers, Ltd., went the order for the head gates and guides amounting to some 2,600 tons. The 4,000 tons of reinforcing steel to be used in the building has been divided between the Canadian Car and Foundry Company, Ltd., Peck Rolling Mills, Steel Company of Canada and Canadian Tube and Steel Products.

The orders for the necessary generators and water wheels were announced some time ago. The Canadian General Electric Company of Peterborough, Ontario, is to build four great generators of 50,000 horse power capacity each, also two 8,000 horse power units, while the Dominion Engineering Works of Montreal obtained the orders to supply the water wheels to operate these turbines, as well as embedded parts to provide for the raising of the power house capacity from 200,000 to 500,000 horse power.

The Beauharnois undertaking is one of the very largest power development projects under construction in Canada, involving as it does the digging of a 15-mile power and navigation canal to bring the water from Lake St. Francis down to the head of the penstock at Lake St. Louis. All along the way between these widenings of the St. Lawrence constructions is progressing rapidly with approximately 2,000 men on the pay roll and sub-contracts placed recently for the diversion of the little St. Louis River and for the removal of over-burden at the tail-race site. The major portion of the work is in the hands of the construction subsidiary known as the Beauharnois Construction Company which is operating very large equipment in the excavation of the canal.

The big hydraulic dredge, moveable steel tower excavators and the great gasoline and electric shovels are operating day

and night. It was announced recently that more than 4,000,000 cubic yards of material had been moved. For the preliminary installation of 200,000 horse power some 20,000,000 cubic yards are to be excavated. About 50,000,000 cubic yards will be moved before the plant produces 500,000 horse power. Large scale operations have been going on since early in the Spring and in July the output of the hydraulic dredge is believed to have created a new world record. The initial installation of 200,000 horse power is to come into operation on October 1st, 1932, after which date the canal will be widened and additional units will be installed in the power house, permitting the generation of a further 300,000 horse power. The total output of hydro-electric energy will thus reach 500,000 horse power, an installation at present surpassed in Canada only in the Queenstown power house on the Niagara River, and at the Isle Maligne plant on the Saguenay River.

Construction still Active in Canada.

According to MacLean Building Reports, Ltd., the value of construction work started in Canada in August exceeded the figure for July by 32.2 per cent. The August contract awards were valued at \$49,407,200, making the total for the eight months of the current year \$327,407,600, which is 17 per cent. less than that for the same period of 1929. Building contracts showed a decrease of 29 per cent.

Engineering contracts represented 40 per cent. of the value of construction in Canada during the period, having an estimated value of \$131,016,200. Business buildings accounted for 34.1 per cent. or \$111,570,800 in all. Residential construction represented only 18.9 per cent. or \$61,805,300, and industrial construction \$23,015,300, or 7 per cent.

The Abitibi Canyon power development in northern Ontario was the largest construction project begun during August, the value of the contract being \$10,000,000. The extension northward of the Timiskaming and Northern Ontario Railway accounted for a contract value at \$2,000,000.

Other important contracts awarded were:—

Grain elevator at Catarqui Bay, Kingston, Ont., 2,000,000; Institute for the Blind, Montreal, 2,000,000; Transmission Line in Province of Quebec, 1,000,000; Installation of trunk water mains, Montreal, 815,000.

The Port of London Authority.

London's 1,100 Ships per Week.

The 1,109 ships which used the Port of London during the week ended September 5th represented an aggregate of 1,016,714 net register tons. 585 vessels (839,786 net register tons) were to and from colonial and foreign ports and 524 (176,928 net register tons) were engaged in coastwise traffic.

Eight vessels discharged meat cargoes during the week, six from Australia ("Horatona," "Westmoreland," "Oronsay," "Buteshire," "Tamaroa" and "Port Dunedin") and two from South America ("Napier Star" and "Princesa").

Altogether some 160,000 carcasses of lamb and mutton, nearly 90,000 quarters of beef, quantities of pork and rabbits, and 14,000 packages of sundries were distributed to the London market and throughout the country or placed in cold storage.

London's Shipping.

During the week ended September 12th 897 vessels, representing 1,057,420 net register tons, used the Port of London. 584 vessels (890,444 net register tons) were to and from colonial and foreign ports and 313 (166,976 net register tons) were engaged in coastwise traffic. The 322 vessels which used the Authority's docks during this period represented the highest tonnage (696,043 net register tons) for any one week recorded this year.

Eight vessels discharged meat cargoes during the week, five from Australia ("Narkunda," "Port Freemantle," "Port Pirie," "Hobson's Bay" and "Ferndale") and three from South America ("Sutherland Grange," "Highland Monarch" and "Afric Star"). Altogether some 400,000 carcasses of lamb and mutton, nearly 80,000 quarters of beef, quantities of pork and rabbits, and 40,000 packages of sundries were distributed to the London Market and throughout the country or placed in cold storage.

During the week ended September 19th, 1,248 vessels, representing 1,004,047 net register tons, used the Port of London; 598 vessels (779,264 net register tons) were to and from

Colonial and foreign ports and 650 (224,783 net register tons) were engaged in coastwise traffic.

Four vessels discharged meat cargoes during the week; one from Australia and New Zealand, the "Balranald," two from South America, the "Almeda Star" and "Duquesa," and one from South Africa, the "Gloucester Castle." Altogether some 7,000 carcasses of lamb and mutton, nearly 70,000 quarters of beef, quantities of pork and rabbits, and 23,000 packages of sundries were distributed to the London Market and throughout the country or placed in cold storage.

Bombay Port Trust.

At a meeting of the Trustees of the Port of Bombay, held on 26th August, 1930, the following were the main items of business disposed of:—

The audited accounts for the year ended 31st March, 1930, were approved and the surplus of Rs.3.21 lakhs in General Account was transferred to the Revenue Reserve Fund, which now stands at Rs.83.54 lakhs actual, or market value Rs.70 lakhs. The surplus of Rs.1.63 lakhs under Pilotage Account was transferred to the Vessels Replacement Fund.

A supplementary estimate amounting to Rs.21,400 was sanctioned, subject to the sanction of Government, for paving and metalling the quay at No. 16 berth, Alexandra Dock, where the new transit shed will shortly be opened for traffic. The work forms part of a quay-paving programme approved by the Board in 1925. An expenditure of Rs.536 was sanctioned for providing additional furniture and other initial equipment for the Social Welfare Centre at Antop Village, which is conducted by the Y.M.C.A. on behalf of the Port Trust for the benefit of lower paid employees.

A 72-year lease of a plot of land (admeasuring 132 sq. yards) at Henry Road, Apollo Reclamation, was granted for private garages and residential flats. A 10-year renewal of Rent Roll No. 909 (area 1,248 sq. yards), Reay Road, was also granted at the existing rate of rent for workshops, offices and godown.

Port of Southampton Topics.

Developments at the Town Quay, Southampton.

The ever-recurring records which are established in the existing docks and the continual progress of the new dock estate have tended to overshadow the trading record of the Town Quay, which is of great importance to Southampton.

The Quay from early days has been a trading centre for the town and a centre for shipping to ports in the United Kingdom and to further afield. The Quay is controlled by the Southampton Harbour Board, and alongside other dock developments this body has not been inactive.

During the past twelve months all the berths, with one exception, have been dredged, and a seven-ton electric crane has been provided to meet the needs of the heavier commodities which are constantly being received. During the same period the berth provided by the reclamation of land between the Quay and the Royal Pier has also become available for traffic, whilst work is now being pushed ahead on a fine new double-storeyed warehouse which will be largely used for bonded goods.

Large quantities of timber come to the Quay both in bulk and in its manufactured state, and fully 6,000 tons are received each year. This traffic is a fast expanding one, and the timber imports to the Town Quay increased from 4,654 tons in 1928 to 6,187 tons in 1929.

Three New Services to be Added to Southampton.

Side by side with the growing extension of the docks has come the gratifying announcement of three new services to be added to the port.

Southampton is to become the chief passenger port of the British India Steam Navigation Company for the outward service to Bombay and Karachi. The service will be inaugurated in October with the "Dumana," which will be followed by the "Domala," vessels of between 8,000 and 9,000 tons.

Hitherto the passengers have embarked at London, for which purpose the ships have returned to the Thames from Antwerp, where they have taken in Continental cargo. The schedule, however, is to be changed, and the vessels will in future load cargo in London and then proceed to Antwerp, and come on to Southampton for passengers.

The British India Company is one of the most powerful maritime organisations trading with the East, and the establishment of a definite passenger connection with Southampton can be regarded as a move that opens up big possibilities for the future. Southampton has had a long association with the British India Company mainly by reason of the ships which have been engaged on troop work from this port.

The company is interested in many services from this country, and it is gratifying that Southampton is to become identified with such an organisation. Another interesting fact in connection with the British India Company is that, although there is no indication at the moment that their cargo ships will call at Southampton regularly, arrangements have been

made for two of the vessels to put in at Southampton in December for the purpose of embarking a large number of horses.

The second new service is that of the Anchor Brocklebank Line, whose steamers will, from the middle of October, call at Southampton at fortnightly intervals to discharge cargoes of Virginia tobacco from Baltimore for the use of the recently built tobacco factory at Southampton. Six or eight vessels will be engaged in the trade.

As from December the Union-Castle Line has decided to send its intermediate vessels to Southampton to land passengers and discharge cargo before proceeding to London. This will be a fortnightly call and will bring 28 extra liners to Southampton next year.

The development of the Union-Castle trade with Southampton is particularly gratifying, for the Company is one of the oldest using the port; indeed, if the association of the old Union Line and Castle Line prior to amalgamation is taken into account, it is the oldest. The Company's mail and passenger service, which brings so much trade to the port, is shortly to be strengthened by the new 20,000 ton motor ships, "Winchester Castle" and "Warwick Castle," which are being completed at Belfast.

The intermediate liners are to call at Southampton regularly on their homeward voyages from the Cape. These ships previously proceeded direct to London, though they have made occasional calls here, but they will now land all their passengers for the United Kingdom at Southampton, as well as discharge large quantities of wool, hides and skins, and fruit in season. Southampton is a very convenient centre both for distributing these goods in this country and for trans-shipping them to Germany and France, for the Union-Castle Line run a service from Southampton to Hamburg, and the cross-Channel steamers afford nightly connection with the French ports.

Southern Railway and Southampton.

How much Southampton owes to the Southern Railway was revealed by Mr. Sam R. Newcombe, Divisional Marine Manager to the Company, at Southampton, in an address to Southampton Master Mariners Club on cross-Channel services. Mr. Newcombe said that in 1929 the passenger vessels of the company carried 263,403 passengers from Southampton, equal to 730 a day, and carried 212,750 tons of cargo, an average of 600 tons a day. In addition, 2,560 motor cars were transported across the Channel by Southern steamers.

To deal with this traffic it was necessary to make 2,997 voyages during the year, an average of eight vessels a night. Between June and September the Company had an average of twelve vessels of the Southampton fleet at sea every night, and on one exceptionally busy night no fewer than nineteen of their craft were crossing the Channel.

Semi-Automatic and Automatic Pumping Stations.

In cases where the expense of installing the automatic starting apparatus and switchgear for fully automatic service cannot be afforded, pumping stations are often designed for semi-automatic working. In such cases the plant is started by hand, after which no more supervision or attendance is required. Current is cut off automatically when the pump has finished its work and the plant remains at rest until the current is again switched on by hand.

When the pump has to raise water to a high level tank or reservoir, an automatic float valve can be fitted in the reservoir at the end of the delivery pipe. This valve closes the pipe when a pre-determined maximum pressure is reached in the reservoir. When delivery is throttled by the valve closing, the pressure in the still running pump rises. A pressure switch or contact pressure gauge in the delivery pipe cuts off current to the motor, thus putting the pump automatically out of action. When the tank has to be filled again, current must be switched on by hand. It is usually possible to know when this will be necessary, since the quantity of water used daily will be almost a steady quantity. In the case of fire, the pump can be started up at once by hand and will supply sufficient water to the mains, so that the water in the reservoir can be kept in reserve for use in case of necessity.

When the quantity of water which may be pumped in a given time is limited because of the rate of flow to the suction well being insufficient, a float switch is fitted in the suction well in order to switch off the current to the motor when the level of the water has fallen to a certain point.

In many cases both methods of switching are combined, particularly when the demand for water and the rate of flow to the suction well are both subject to wide fluctuation. Current is then cut off by the pressure switch when the tank is full and the float valve closes the delivery pipe, and by the float switch in the suction well when the well has been emptied to a certain depth. In this manner, the plant works with the minimum of attention, and its reliability is considerably increased and at little cost, since the extra cost for the semi-automatic apparatus is hardly worth mentioning in comparison with the expense of operating the plant entirely by hand.

Grain Elevator for Kingston, Ontario.

The Canadian Terminal Company of Toronto has now awarded to the Barnett-McQueen Construction Company of Toronto a contract for the erection of their new 4,000,000-bushel grain elevator at Catarqui Bay, Kingston, Ontario.

Construction will be begun almost immediately in order that the elevator may be ready to handle the 1931 grain crop. In this connection it may be recalled that Canada Steamship Lines, Ltd., has already undertaken the erection of a 2,500,000-bushel elevator, now approaching completion. These elevators will make Kingston an important transfer point for grain next spring, when the great freight steamers from the upper lakes come through the new Welland Ship Canal into Lake Ontario.

Jugoslavian and Near Eastern Port Matters.

ACCORDING to the official statistics which have just been published by the Yugoslav Authorities, shipping at Yugoslav ports during 1929 has shown an increase.

In this connection it may be interesting to point out that 183,916 ships, totalling 29,907,022 n.r.t., arrived and cleared from these ports against 17,009 ships, totalling 28,799,722 n.r.t., arrived and cleared during 1928. But an idea of the distribution of shipping among the various ports may be gained from the following schedule:—

	Ships	N.R.T.
Split ...	19,587	5,710,635
Sussak ...	8,681	2,097,108
Dubrovnik ...	9,192	3,197,832
Sibenik ...	8,919	1,798,528
Kotor ...	3,860	997,662
Metkovich ...	2,868	439,520
Bar ...	1,477	362,250

In connection with goods imported and exported Split always maintains first place, followed by Sussak, Dubrovnik and Sibenik. When it is considered that the cement industry is concentrated wholly in the district around Split, it will easily be realised the great importance this port holds with regard to Yugoslav shipping. However, in order to realise the development of the various Yugoslav ports it may be interesting to consider the following figures:—

	Shipping with National Ports	1929 Shipping with Foreign Ports (Centals)	Total Shipping	1928 Total Shipping
Split ...	1,301,600	10,210,005	11,511,605	10,800,205
Sussak ...	851,173	5,487,270	6,341,443	5,945,000
Dubrovnik ...	286,401	3,381,877	3,668,278	—
Sibenik ...	256,608	2,063,595	2,320,203	—
Metkovich ...	495,960	472,345	968,305	—
Bar ...	140,784	21,577	162,361	—
Kotor ...	104,138	27,811	131,949	—
Other Ports...	1,997,579	2,802,712	4,800,291	—

In regard to shipping at Yugoslav ports, it should be considered that until recently several of these ports did not have appropriate warehousing facilities, which very much hindered the development of trade, but, according to the latest reports, Sussak, Sibenik, Split and Dubrovnik are to have by 1931 up-to-date concrete warehouses with cranes and elevators, while General Bonded Stores are to be erected both at Sussak and Split. In connection with the maintenance of the Yugoslav ports, it should be noted that up to the present the Belgrade Government has disbursed 31,635,791 dinars, while a programme of large improvements has been put into effect, which includes the construction of a railway connecting the port of Sussak with the port of Martinchitza (about 5 miles from Fiume) so as to make a single body of the ports of Sussak, Martinchitza and Bakar, for which a credit of 17 million dinars has been allotted during 1930; the construction of a new quay in the Port of Sussak and the construction of large warehouses both at Sussak and Split, and the transfer from the Yugoslav Tobacco monopoly to the private free trade of the warehouses with the various electric cranes in Dubrovnik, for which a credit of 40 million dinars has been allotted during the period January—December, 1930. Furthermore, the budget for 1930 also includes a credit of about 10 million dinars for the enlargement, improvement and, above all, for the maintenance of other harbours such as Metkovich, on the Narenta river, which requires extensive dredging work.

In the Yugoslav shipping quarters the question of drydocking facilities is being seriously considered, as at any time a ship of over 1,000 gross tons requires overhauling it must be towed to the Cantiere Navale del Carnaro, in Fiume, which owns the only dry dock in the Eastern Adriatic.

In connection with the various countries participating in Yugoslav shipping, it may be interesting to consider in the first place the following figures:—

	Arrivals and Clearances during 1929.	Ships	Net Register Tons.
Jugoslav ...	108,743	22,193,800	
Italian ...	13,674	5,542,005	
British ...	343	930,401	
Greek ...	241	209,206	
German ...	56	124,382	
Dutch ...	76	114,714	
French ...	32	44,076	

In this regard it may be worth while adding that the Yugoslav Mercantile Marine at present includes the following tonnage:—

	No. of Ships	Gross Tonnage	Net Tonnage
Ocean Going Ships ...	59	240,716	148,405
Mediterranean Going Ships ...	20	25,483	15,506
Coastwise Ships ...	11,084	48,715	38,440
	11,163	314,914	202,351

It is evident that the statistics regarding the Yugoslav participation to national shipping must include also arrivals and clearances of coastwise shipping. Both Italian and Greek tonnage arriving and clearing Yugoslav ports refers very much to ships unloading phosphates or pyrites at Yugoslav ports and exporting lumber, but competition in this regard is now felt by regular steamship services which are being created. As a matter of fact, it is understood that the Yugoslav Government has decided to grant a yearly subvention of 6 million dinars to the Oceania Steamship Company to undertake a fortnightly mail service between Yugoslav ports and Spain.

According to cables from Athens, shipping at Volo is increasing and the Greek Ministry for Communications has taken into consideration the opportunity of further enlargements there.

In this connection it ought to be noted that foreign lines are showing an increasing activity in the Near East, as is noticed from the fact that the Compagnie Francaise de Navigation Paquet has transformed into a fortnightly service the existing line from Pireaus, Istamboul, Batum, Poti, Trebizonda, Samsun, Ineboli, and from time to time also Odessa, Novorossisk and Tuapse, while the State owned Seir-i-Sefain Turkish line has started a monthly freight service from Smyrna and from Mersina to Hamburg and other North European ports. In consequence of the decreased harbour charges and of the fact that the Turkish Government decided to reserve only to the Turkish flag the right of coastwise trade, various Turkish owners have greatly increased their tonnage, but subsequently a bitter competition grew up between them and the State owned line. An agreement was reached, but in consequence of this the Seir-i-Sefain Line had to lay down several ships. Only with the object of exploiting this tonnage, it was decided to start a regular service to Japan, one to the Black Sea and one to Italian and French ports. The success of these trials has encouraged the Turkish State owned service to increase its activity. On the other hand several Greek lines, and particularly the National Navigation Co. of Greece, have had to cease their services to New York, etc., owing to the fact that the Greek Government does not intend to help these lines.

In connection with the development of Danube navigation two of the three docks of the free port, the construction of which was started in 1929 in the Island of Csepel, near Budapest, and which were to include the largest grain silos in Europe, have just been opened and it is expected that the third one (the industrial dock) will be completed during the year.

With reference to improvements which are being carried on in the Near East, it may be interesting to note that a new bunkering station is to be built at Haydar Pacha (Turkey) where the depth of water exceeds 10 metres. Several moles will be built with mechanical bunkering facilities for ships in transit through the Bosphorus, while other ships will bunker at Istamboul. The cost of these improvements will reach 4 million Turkish lire.

Also in Bulgaria the opportunity of improving the facilities at Burgas and Varna is being considered, and a project for extensive dredging works has been submitted to the Government in Sophia. At the same time, the Cie. de Navigation Bulgare has decided to sell their old ships and buy some new liners.

It is understood that inquiries have been made from the Bulgarian ports administration for the construction of ten electric cranes, and it is stated that in view of the creation of free ports at the various Roumanian ports the granting of identical facilities at Varna and Burgas is under consideration.

It is announced that although free ports have been created only at Braila, Galatz, Giurgiu and Constanza as yet, it must be considered that the same regime might be established also at other ports of Roumania. It is understood that the erection of these free ports may be entrusted to private concerns, and in this regard it is stated that German business people have recently called at the various ports to study the opportunity of developing trade with the Black Sea through these ports.

Dock Labour Problems.

Mechanical Cargo Handling Creates Specialised Workers.

ONE of the most useful reports dealing with a common problem of dock working, namely, casual labour, is that which has been prepared by Mr. F. G. Hanman, the officer appointed by the Ministry of Labour to investigate the subject. One important section of his report deals with the Liverpool Dock scheme. The docks on the Liverpool side of the River Mersey, he says, have a river frontage of approximately seven miles, extending from Gladstone Dock at the north end to Herculanum at the south end of Liverpool, whilst on the Birkenhead side the docks are confined to a smaller area. Excluding privately owned graving docks, there are 90 main, branch and graving docks, with a quay length of 29 miles on the Liverpool side, and 9 miles on the Birkenhead side. The docks may be divided into four fairly clearly defined groups, viz:—(i) The North End, from Gladstone Dock to Nelson Dock; (ii) The Central, from Stanley Dock to Wapping Dock; (iii) The South End, from King's Dock to Herculanum Dock; (iv) Birkenhead.

The Mersey Docks and Harbour Board, established by Act of Parliament in 1837, is the controlling authority of the port, but whereas similar bodies in other ports (e.g., Manchester) engage the whole of the labour required for loading and discharging cargoes, the Board's policy has been to leave these duties to shipowners, master stevedores and master porters. This attitude may have been determined partly by historical circumstances.

"Liverpool is essentially a private enterprise port. The Board is a supervising authority providing facilities for the users of the port, meeting demands made by the trade beyond the capacity of private enterprise and, although possessing wide powers, refraining from interference unless absolutely necessary for the common good."

The master stevedore is responsible for loading outward cargoes and the discharge of goods from a ship's hold to the ship's side where they are received by the master porter on behalf of the importers. The master porter is under licence from the Board to receive and deliver goods from the vessel and perform various services required by the consignee.

Liverpool was the first large port to attempt the organization of dock labour, and in 1912 a scheme for the registration of dock labourers was introduced. This scheme is administered by the Ministry of Labour in co-operation with a Joint Committee of Employers and Trade Union representatives. The port was divided into six areas as follows:—"A" Alexandra Dock Area; "B"—Canada Dock Area; "C"—Central Docks for coastwise traffic; "D"—Wapping Dock Area; "E"—Toxteth Dock Area; "F"—Birkenhead. In each area a Ministry of Labour Clearing House was established with a Central Clearing House for co-ordinating purposes. In addition to the Central Joint Committee, an Area Committee, constituted on similar lines, was formed for each of the six areas. The chief objects of the scheme were:—(1) To register dock labourers and to limit employment to tally holders; (2) To centralise payment of wages; (3) To centralise the stamping of tally holders' insurance cards or books under the National Health Insurance Acts and later the Unemployment Insurance Acts; (4) To create surplus stands in order to facilitate the mobility of labour. The reduction from 31,300 to 21,500 in the number of tallies suggests a substantial measure of decasualisation, but the reduction in the number of registered dockers has, in fact, not been accompanied by increased regularity of employment.

According to the returns supplied by the Mersey Docks and Harbour Board, the approximate total weight of goods imported and exported through the Port of Liverpool during the years 1912, 1913, 1928 and 1929 were:—1912, 15,921,641 tons; 1913, 16,877,974 tons; 1928, 14,201,902 tons; 1929, 14,487,713 tons.

It is not possible to translate tonnages of goods into labour demands unless, amongst other factors, regard is paid to the nature of the goods. Obviously different cargoes require varying numbers of men to handle. The 1929 tonnage represents a reduction of 9 per cent. on the 1912 tonnage and 14.2 per cent. on that of 1913. That relating to 1928, a reduction of 10.8 per cent. on 1912 and 15.9 per cent. on the tonnage figures for 1913.

Factors affecting the demand for labour are the development of bulk transportation of certain commodities and the improved method of handling goods at the docks introduced in the intervening years. The increasing use of travelling cranes, wall cranes, electric bogies, elevator stowing machines, pneumatic elevators and similar mechanical appliances has undoubtedly resulted in a saving of labour in the clearance of a given tonnage of goods. This factor, together with the

result of the general trade depression, with its consequent reduction of goods passing through the port, probably accounts for the reduced number of individuals employed. In any case, this reduction in the demand for labour must be borne in mind when considering the extent to which the control of tallies has been effective.

From answers given at interviews, approximately 75 per cent. of the dockers live within one mile of the docks where they usually seek employment. The percentage at Birkenhead is slightly higher and lower at "C" Clearing House.

It is often stated that specialisation is a serious obstacle to the mobility of labour, but in recent years, particularly since the war, specialisation in the dock industry, apart from the main division between shipment and porters, has been reduced considerably. The growing mechanisation of the port and changing methods of handling cargoes have so modified the duties of workers such as deal carriers, ricers, grain and salt porters that they cannot now be regarded as specialists. Thus in the case of grain porters, before elevators were introduced, bulk grain was sacked by bushellers in the hold, hoisted and emptied on to the quay and the empty sacks returned to the hold. Other bushellers would again sack and weigh the grain and place on carts. Bushelling was a specialised job and men following grain work would not handle other cargoes. Bucket elevators eliminated in the main the old bushellers, and with the introduction of the pneumatic elevator or "sucker" and the discharge overside into lighters of the great bulk of the grain, grain portering has ceased to be a specialised occupation. The regular gangs of porters engaged on unloading rice are called "Ripo gangs," but they also work on general cargoes. In passing, it is of interest to note that the term "ripos" originated with the ricers when it was the practice "to give so many pints for an increase in the number of tons of rice discharged." The money is still paid and is now often called "blood money." These quay porters, known as "ripos" or "star gangs," have a reputation for continuous work, and when transferred to other cargoes, caustic comments are not unusual on the part of the shipmen who have to "speed up" in order to keep pace with the quay porters. Four or five years ago, it was common practice for quay porters to shoulder each quarter of beef, but now electric and ordinary bogeys are used, and except occasionally, e.g., on a Sunday, when one firm may supplement their electric bogeys with individual carrying in order to expedite delivery, the old method is obsolete; no specialised skill appears to be necessary in handling the cargo—certainly not on the quay side. Even on this work non-specialists were found to be engaged.

The handling of timber by dock labourers is another example. Logs of timber which required, according to weight, gangs of 4, 6, 9 or even more men, are now transported across the shed by electric bogeys driven by one driver and with two men to steady the log. A derrick picks up and piles the logs. Again, barrels weighing 15-cwt. are lifted and conveyed to desired spots by bogey, whilst elevating stowing machines can remove bags from weighing machines and stow them in piles 7½ sacks high.

The increased use of machinery, whilst eliminating the majority of the specialists formerly accustomed to handle the commodity, is introducing a new type of specialised worker to control the machine, but such specialised workers do not confine themselves to one class of work.

Contract Secured.

The fact that the Combustion Steam Generator has now advanced beyond the experimental stage and is accepted as an efficient and reliable steam raising unit is evidenced by the number of such boilers already operating or under construction in various parts of the world. It was recently announced that four boilers of this design were to be installed in the extensions to Brimsdown Station, of the North Metropolitan Power Station, Co., Ltd., and we are now informed that Combustion Engineering Corporation have received an order from the Solvay Process, Co., New York, for a Combustion Steam Generator.

The boiler will have a heating surface of 15,671 sq. ft. and will be fired by two unit mills with tangential burners. The flue gas heat extraction equipment will comprise a twin plate type air heater.

This order brings the number of Combustion Steam Generators up to forty, a remarkable figure considering the short time that has elapsed since the first unit was constructed as an experimental boiler.

North-East Coast Notes.

Tyneside Development Schemes.

THE statement made by Mr. J. J. Lawson, Member for the Chester-le-Street Division of Durham and Parliamentary Secretary to the Ministry of Labour, that Tyneside development schemes were under consideration, was particularly interesting as it is inferred that Jarrow Slake would form the centre of the plan. Mr. Lawson's statement was that schemes are under consideration by the Tyne Improvement Committee for the extension of Tyneside docks so as to take the largest liners in the world, and for British merchandise shipping development to be pursued in this country with the help, possibly, of a subsidy from the Government, rather than let it be done abroad.

"Our idea, now awaiting the approval of Mr. William Graham, the President of the Board of Trade," Mr. Lawson said, "is that for every 2,000,000 tons of ships scrapped in this country £1,000,000 should be spent on new ships to be built by firms here."

The scheme for improvement of Jarrow Slake, the Tyne Improvement Commission has had under consideration for three or four years. The Commissioners have had plans before them for utilising the area for shipping purposes. It covers over 100 acres. It was stated some time ago that the utilisation of the Slake for the purpose indicated would in the first instance involve an estimated outlay of £1,000,000, and probably £2,000,000 to complete it.

Newcastle Quay.

A meeting of the Newcastle City Council in September approved a report by the Trade and Commerce Committee, presented by their chairman, Alderman Walter Lee, relative to the Newcastle Corporation (Quay Extension) Act, under which the Corporation is authorised to have the necessary plans prepared and to obtain tenders for the work. The committee stated that they had been advised that it was preferable that the consultant engineers for reinforced concrete should be under the direct contract with the Corporation, and they, therefore, recommended that Messrs. L. G. Mouchel and Partners be appointed as consultant engineers for the reinforced concrete work, their remuneration being 5 per cent. on the actual cost of the reinforced concrete put into the estimated costs for the whole of the quay extension of £206,000. They recommended, therefore, the sealing of a contract with that firm appointing them consulting engineers.

Trade Statistics.

The north-east coast ports have suffered more in the loss of coal export trade in the first seven months of this year than any of the other great coal exporting areas. During the period named the aggregate British cargo exports to foreign markets were 33,202,249 tons as against 33,941,394 tons in 1929, a reduction of 739,145 tons. The exports from the North-East Coast ports were 11,010,156 tons this year, compared with 11,654,766 tons in 1929, a reduction of 644,610 tons. The coal shipments from the Wear for the first seven months of the year—of which details are to hand—totalled 2,766,876 tons, a decrease of 6 per cent. compared with the same period of last year. Coke shipments at 45,230 tons showed an increase of 3 per cent. Apart from coal and coke, the trade of the Wear shows some expansion, details of which are appended.

		IMPORTS.	
		7 Months 1929	7 Months 1930
Timber	...	51,172 Loads	72,879 Loads
Grain	...	80,096 Qrs.	7,751 Qrs.
Esparto	...	13,062 Tons	9,580 Tons
Iron Ore	...	28,621 Tons	45,407 Tons
Cement	...	6,975 Tons	7,793 Tons
Petroleum	...	51,641 Tons	54,653 Tons
Wood Pulp	...	3,461 Tons	3,808 Tons
Iron and Steel	...	10,075 Tons	10,171 Tons
Sundries	...	25,206 Tons	23,434 Tons
Total		206,183 Tons	229,296 Tons
		EXPORTS.	
		7 Months 1929	7 Months 1930
Machinery	...	4,934 Tons	9,027 Tons
Iron and Steel	...	2,466 Tons	1,904 Tons
Pitch	...	2,572 Tons	14,092 Tons
Creosote	...	2,770 Tons	4,032 Tons
Petroleum	...	13,832 Tons	17,319 Tons
Sundries	...	4,835 Tons	5,574 Tons
Total		31,429 Tons	51,948 Tons

A Noteworthy Record.

At the latter part of August there was launched from the Jarrow Yard of Palmer's Shipbuilding and Iron Co., Ltd., a motor launch for the Anglo-American Oil Co., named the "Cheyenne." It was a notable boat as representing the very latest ideas in the construction of oil carriers, and it was also notable in being the one-thousand-and-first vessel built by the firm. This is a great record for the output of the tonnage represented by the 1,001 ships exceeded two-and-a-half-million tons. The firm built the "John Bowes," the first screw collier, in 1852, the "Terror," the first warship with rolled armour plates in 1856, and the "British Inventor," the first oil tanker built under the new Isherwood bracketless system in 1926. It may be noted that the "John Bowes"—after 78 years' service—is still under commission although bearing another name and flying another flag. The first vessel to carry petroleum in bulk, the "Vaderland," also was built by the firm in 1872.

Trade on the Tees.

Returns issued by the Tees Conservancy Commission in September give the imports of pig iron and steel to the River Tees for the ten months ended August 31st last, together with the figures for the same months a year ago and for the corresponding pre-war period of 1913 and 1914. The pig iron imported during the months just ended was returned at 10,405 tons, compared with 25,900 tons a year ago, and only 312 tons in the pre-war period. Crude sheet bars, billets, blooms and slabs unloaded to the end of last month amounted to 84,872 tons, compared with 89,063 tons a year ago, and 33,646 tons in the pre-war period. Plates, bars, and angles, rails, sheets and joists unshipped to the end of August last are given at 27,802 tons, compared with 40,860 tons a year ago, and 19,441 tons in the pre-war period. The total imports of iron and steel in the past ten months reached 123,079 tons, compared with 155,232 tons for the same time a year ago, and 53,399 tons in the pre-war period.

The August shipments of iron and steel from the Tees totalled 63,039 tons compared with 71,345 tons in July last. The month's clearances comprised 16,863 tons of pig iron, 4,223 tons of manufactured iron and 41,953 tons of steel. Of pig iron loaded 9,855 tons went to foreign destinations, and 6,978 tons coastwise. Of the manufactured iron cleared 3,136 tons went abroad, and 10,878 tons coastwise, and of steel shipped 26,395 tons went overseas and 5,558 tons coastwise.

Scotland was the largest buyer of pig iron, accepting 4,530 tons, while Wales took 2,448 tons, Italy 2,400 tons, Canada 1,300 tons, Spain 1,140 tons and France 1,117 tons.

The Union of South Africa was the heaviest purchaser of both manufactured iron and steel importing 2,027 tons of the former and 7,890 tons of the latter. Other principal customers for steel were: India 4,647 tons, Argentine 4,113 tons, Canada 1,771 tons, Norway 1,414 tons, and Portuguese East Africa 1,100 tons.

A comprehensive scheme for the improvement of crane equipment at Middlesbrough Dock has been drawn up by the London and North-Eastern Railway Co., and will be started at once. Thirty-nine of the 42 cranes in operation at the dock are to be replaced by the latest type of electrically-driven cranes. Each of these will be fitted with fast gear for working at half maximum capacity. It is understood that the London and North-Eastern Railway Co., will have Government aid in carrying out the scheme.

Personalia.

The death of the Duke of Northumberland removed a striking personality in the North, and one who took a keen interest in many phases of industry in the area with which he was more particularly associated. He was for many years president of the North of England Steamship Owners' Association, following his father in that office, one which the last Duke filled with conspicuous ability.

Mr. F. N. Ross has been appointed fitter on Newcastle Commercial Exchange to the group of pits owned by Hartley Main Collieries, Ltd., in succession to Mr. J. T. Roberts, who has retired.

During the month death removed Mr. Edward Lowes, who was widely known in Tyneside industrial circles, having held the appointment of works manager of the Neptune Engine Works of Swan Hunter and Wigam, Richardson.

